

for, R. R.
See 12



THE QUARTERLY REVIEW OF COMMERCE



A Case for Post-War Planning

Wesley Cutler

A Management Approach to
Post-War Manpower Planning

*Clarence Fraser
and H. G. Kettle*

Our Natural Resources and Canadian-American
Aspects of Their Conservation

John D. Detwiler

Industrial Nutrition

Howard L. Walker

Industrial Fire Inspections

J. S. Kennedy

Canada's Business Press

Ralph W. Magee

Volume X

No. 4

UNIVERSITY OF WESTERN ONTARIO

Free Enterprise versus Regimentation

The productive powers of free enterprise among the United Nations, as opposed to regimented industry under Axis domination, are now outpacing State regimented business. Free enterprise has put patriotism ahead of profits . . . Victory ahead of every other consideration.

For 89 years this Bank has contributed to the success of enterprising Canadians — assisting the Dominion to take its rightful place in the sphere of International economics.

THE BANK OF TORONTO

50-44

Incorporated 1855

UNIVERSITY OF WESTERN ONTARIO

London - Canada

The Department of Business Administration offers the following undergraduate courses:

Introduction to business organization; accounting and book-keeping; business mathematics; advanced accounting; business statistics; commercial law and documents of commerce; marketing; finance problems; industrial management; cost accounting; sales management; factory industries; public and business administration; auditing; business research; retailing; advertising; international commercial relations.

The foregoing and other subjects of vital concern to the business executive of the future are taught by lecturers, by Socratic method, by text books and by personal investigation and practice.

For particulars write to the Head of the Department of Business Administration or to the Registrar.





THE QUARTERLY REVIEW OF COMMERCE

VOLUME X

NUMBER 4



1944

EDITORIAL COUNCIL

R. B. WILLIS, M.A.	M. K. INMAN, Ph.D.
E. E. REILLY, M.S.	
C. J. BITTNER, Ph.D.	E. G. JARMAIN
<i>Consulting Editor</i>	ELEANOR C. DOHERTY, Ph.D.
<i>Managing Editor</i>	BYRON BOUGHNER
	STAFF
Editorial Assistants	JOHN COOPER, HAL. LUFT, BERNARD CARSON
Circulation Manager and Advertising Manager	A. K. BECKMAN
Secretary	DELLA NEIL

Editorial

A Case for Post-War Planning	Wesley Cutler
	Page 169
A Management Approach to Post-War Manpower Planning	Clarence Fraser and H. G. Kettle
	Page 183
Our Natural Resources and Canadian-American Aspects of Their Conservation	John D. Detwiler
	Page 193
Industrial Nutrition	Howard L. Walker
	Page 203
Industrial Fire Inspections	J. S. Kennedy
	Page 210
Canada's Business Press	Ralph W. Magee
	Page 219

THE QUARTERLY REVIEW OF COMMERCE does not assume responsibility for the statements or opinions of its contributors.

PUBLISHED QUARTERLY

By the Departments of Business Administration and Political Science,
University of Western Ontario

50c per copy.

The subscription terms: \$2.00 a year; \$5.00 three years. Entered as second class matter at the Post Office at London, Ontario. Address all communications to the Managing Editor, The Quarterly Review of Commerce, University of Western Ontario, London, Canada.

THE QUARTERLY REVIEW OF COMMERCE

Editorial

POST-WAR CANADA AND THE UNITED STATES

For 60 years before the Trade Agreement of 1935, Canada and the United States operated under tariff policies designed to restrict rather than to promote trade between the two countries. An attempt to protect the finished products and to produce a national self-sufficiency for each country resulted in a virtual duplication of industrial development and industrial effort. This defeated a closer integration of the North American economy.

Of course, during the war, the trade barriers between the two countries have been virtually eliminated. But, whatever happens after this war, we must preserve the tremendous new production facilities that have been built for this war and turn them to the creation of peacetime wealth.

To foster the volume of trade between Canada and the United States, which is greater than that between any other two trading nations in the world, Canadians must actively support the progressive, annual reduction of tariffs, until levels are reached which are mutually agreeable. Just as the past has shown that the two countries can adjust themselves materially, the future will prove that Canada and the United States can adjust themselves sanely in the field of international commerce.

—J. B. B.

—DEPENDABILITY

We zealously guard our reputation for dependability with our customers, suppliers and our competitors alike. With us the outstanding meaning of the word is the ability to send you highest quality merchandise — not next week — but when you need it. . . .

HUNTER PRINTING COMPANY

"Quality Printing With Service"

226 KING STREET

London :: Ontario

METCALF 1724



THE QUARTERLY REVIEW OF COMMERCE

VOLUME X

NUMBER 4



1944

A CASE FOR POST-WAR PLANNING

WESLEY CUTLER

CANADA is today fully occupied with an all-important job. It is a job whose accomplishment is demanding a very large portion of our manpower, of our industrial capacity, of our best brains, of the product of our mines, our forests and our farms. To help win the war, the resources of the Dominion, both material and human, are being subjected to a wholesale and sharp diversion into channels other than those they have customarily followed.

These drastic changes in our economy are universally recognized as essential to fit our nation for the task we have undertaken. One day, however, and it may be a matter of years or only a matter of months from now, we are going to emerge from this war and we shall then be confronted with the necessity of transforming our economy to a peace-time basis. The vast and pressing nature of the problems which will arise in the immediate post-war period and the serious consequences of failure to achieve their adequate solution have impelled the preparation of this paper.

When peace again comes to the world what, in the absence of counter-balancing action, may we expect will be its effect upon this nation? In the first place, the end of war will mean the end of production of the implements of modern warfare — guns, tanks, military planes,

small arms, shells and the hundred and one things that go into the equipment and maintenance of the modern army. It will mean an end to the huge demand for the metals and chemicals and textiles and products of farm and factory required to feed the war machine. It will mean that the labour and plant and equipment drafted into production for war will no longer be required for that purpose. It will mean the purchasing power flowing from the Government into all branches of the economy in payment for the implements of war will be drastically scaled down and rapidly eliminated entirely.

POSSIBLE SHORT-TERM BOOM

Civilian demand, released by the termination of war and fed by forced or patriotic wartime savings, might well bring about a spending spree at the end of the war just as there was in 1919 and 1920 with rising prices and all the outward manifestations of prosperity. Experience and common sense warn us, however, that this prosperity would rest upon an unstable base and that it would be short-lived. They teach us that only the resumption of sound peacetime production, taking up the idle labour released by war industry, could place our economy on any sort of solid footing.

Obviously the great bulk of those unemployed as a result of the cessation of production for war could not immediately be taken up by civilian industry which, with military demands taking precedence, will itself be operating on a greatly reduced scale when the war ends. After an interval, nonetheless, we might expect this idle labour to be absorbed as our economy proceeded, in the absence of unfavourable developments, through the transition to a peacetime basis.

UNEMPLOYMENT SHUTS OFF PURCHASING POWER

Failing some action to prevent their occurrence, however, there are always "unfavourable developments" when those who have been employed are placed in enforced idleness. Unemployment means a shutting off of current income which leads to a severe and generally immediate reduction in effective purchasing power since those most vulnerable to loss of employment are essentially also those least able to build any substantial reserves of savings. Reduced purchasing power coming into contact with a steady or increasing* flow of consumers' goods and services leads, in the absence of counter-balancing action, to falling prices, unprofitable business operations, curtailed production,

*With the end of the war, there will be an automatic increase in the supply of consumer goods and services as wartime requirements are restricted and shut off.

more unemployment, a still further decrease in purchasing power and so on through the steadily accelerating, deflationary spiral with which we are only too familiar.

The incentive necessary to induce industry to undertake any type of production is the existence of a demand, backed by purchasing power, for the product of that industry. If there is lack of effective demand for consumers' goods after this war, as evidenced by falling prices and unprofitable business operation, management will not be in too great a hurry to convert its wartime plant and to get into peacetime production. In addition, the funds necessary for the conversion of plant to a peacetime basis and for the construction of new plant will not be readily forthcoming from private sources when it cannot be demonstrated the plant can be operated on a profitable basis. If, therefore, a period of unemployment, reduced purchasing power and depressed business conditions is allowed to set in after the war, there will be a tendency to delay the transition to and expansion of peacetime production, with consequent postponement of the action required to right the maladjustments set up in the immediate post-war period.

In 1914-1918 never at any time was more than 10% of the national income of Canada devoted to war. Today, we are diverting over 50% of our national income to war purposes.

In 1914-1918 also Canada's rôle was radically different to the one she is playing today. Then she was a source of raw materials, with manufacturing playing a relatively minor part. Today Canada is a highly industrialized nation and the nature of her contribution to the war is, to a correspondingly greater extent, in the form of manufactured goods of all kinds.

It is obvious how this infinitely greater diversion of national income to war purposes and this changed character of our participation in the war will affect the nature and magnitude of the impact of the post-war period upon our economy. In the absence of offsetting action, the dislocations which followed the first World War will be repeated in greatly magnified form.

PRICE AND WAGE CONTROL CANNOT DO THE JOB

With the introduction of comprehensive measures of price and wage control the hope has been raised that, insofar as the controls prove effective, the dangers of post-war depression will thereby be largely dissipated. That hope is to a great extent illusory. Effective control of prices and wages will cut down the dollar cost of the war. It will

help to alleviate many of the iniquities which in the past have always been associated with war. It will render less severe some of the readjustments of the post-war period. It will do all these things and will thereby perform a most valuable function. It cannot, however, have any decisive effect upon the hard core of our post-war problem which is the maintenance of purchasing power during the transition of our economy to a peacetime basis and the hastening of that transition.

That simply holding prices steady represents no sound insurance against economic chaos is evidenced by the experience of the ten years following 1922. Between 1922 and 1925 prices of wholesale commodities in Canada rose by some 5½%. By 1929, despite the influence of expanding business operations and general prosperity, they had gradually declined again to essentially the level of 1922. The cost of living in the same period fluctuated within very narrow limits and in 1928 and 1929 was at practically the same level as in 1922 and 1923. Despite this marked steadiness in all prices, the year 1929 was followed by the most severe economic depression this country has yet experienced, with the index of the prices of wholesale commodities tumbling some 31% between 1929 and 1932, paralleled by a drop of 23% in the index of the cost of living.

There is nothing sacred about any level of prices which renders it immune to depressing influences provided only that it is held steady. When support in the form of purchasing power is withdrawn the price level, in the absence of pegging, will fall regardless of where it was before the purchasing power was withdrawn and regardless of how long it had held steady at that level. There is no question of the absolute necessity of setting an upper limit on prices during the war. There is no question of the value of the function our setting of a price ceiling can and will perform. There are, however, definite limitations to the burdens stabilization of prices can be expected to bear. Both theory and experience clearly demonstrate that we lean upon a broken reed if we depend upon our anti-inflation policy to play the leading part in the solution of the problem of transition from a wartime to a peacetime economy.

LONG-RANGE EFFECTS OF POST-WAR PROBLEMS

It is unnecessary to dwell upon the suffering and want of the post-war depression which will inevitably develop if we fail to take the requisite preventive action. The human and material losses of the 1930's are still fresh in the minds of all of us, and that very fact contains within itself the seeds of vast and far-reaching effects upon our way

of life if another such period is allowed to get under way after this war. The 1930's taught us how severe and lasting depression can be in our highly industrialized economy. The war years are teaching us that our economy can, if the need is sufficiently great, produce those things we require regardless of whether their production is profitable. Those two things combined in the minds of our people represent potential dynamite which the prospect of severe post-war depression might well touch off. The possible effects of the resultant explosion upon our political, economic and social institutions are largely incalculable.

It is my own personal conviction that, to be sound and worth while, changes in our economics of living must come about at a speed certainly not in excess of the ability of the general populace to absorb and orientate themselves to the changes. In the light of that statement, I repeat that the people of this nation, with the want and suffering of the great depression of the 1930's indelibly impressed on their consciousness and with the ability of our economy to produce the things we require amply demonstrated during the war years, would almost inevitably refuse to face, within the time-tested confines of democracy, another period of prolonged depression. The drastic political and economic experimentations which might ensue could well retard the development of this nation for generations to come.

In the minds of many of our people today is an acceptance of the inevitability of a period of depressed business conditions and general hard times following the war. To permit the spread of that feeling is to invite disaster. Similarly to refuse to face the issue and merely hope that everything will turn out all right is to fail in our duty to this nation and to our future generations.

COURSE OF ACTION HAS TWO NATURAL DIVISIONS

What course of action can be taken to avoid the post-war slump with its immediate evil effects and with the possibilities it contains for projecting far into the future its longer range effects? The requisite procedure falls into two natural divisions. First, the careful preparation now of post-war programmes by governments and by business concerns. Second, the merchandising of government programmes to the people of this Dominion so that, upon the cessation of war, they may be brought into force without delay and with the maximum co-operation of all concerned.

Intelligent and sound planning for the post-war transition period requires an acceptance of the fact that, domestically, the war and the

post-war years must be regarded as but different phases of the same task. An integral part of any job is the cleaning up process which follows it. We accept that fact and are guided accordingly in our own personal and business dealings. Similarly, this nation must face the fact that the post-war period presents a definite challenge which must be accepted and met with all the resources at our command if we are to avoid disaster.

No one, I think, has ever suggested that the nature and degree of our participation in this war be left to the discretion of the Provinces or labour or management or individuals. It was immediately and universally recognized, upon the outbreak of war, that the size of the job necessitated centralization of control in the Federal Government backed by every last resource of the nation it asked for. The War Measures Act of 1927 recognized that fact and provided for the surrender to the Central Government, in the event of war, of certain privileges and authority belonging in peacetime to the Provinces, to labour, to business and to individuals.

The emergency that will face this nation when the war comes to an end will be of a different character to that which was presented to us in September, 1939. It will be, nonetheless, a definite national emergency and failure to recognize it and meet it intelligently and courageously will involve severe penalties. Just as with the emergency of the war, so our Federal Government, equipped with all the tools that can be provided, is the only agency capable of successfully combatting the emergency of the post-war period of adjustment. The war and the post-war period are but different stages of the same emergency. It is vital that we fully recognize that fact and it is vital also that we retain intact, until the job is completely finished, the full complement of the organization built to meet the emergency. That organization consists of the widespread system of wartime controls, the centralization of authority at Ottawa and the imposition of heavy taxation and resort to heavy borrowing to pay the costs of doing the job. Finally, it consists of the nation-wide and whole-hearted acceptance of the necessity of the controls and taxation and the thorough understanding by our people of the serious results of failure to face up to the situation.

A CHALLENGE TO GOVERNMENTS, BUSINESS, LABOUR AND INDIVIDUALS

While in the conduct of the war our Federal Government by common consent plays the major part, nonetheless there is ample room for individuals, business concerns, labour groups, the municipalities and the

provinces to take the initiative on their own account in furthering the war effort. Similarly in the process of easing our economy back to a peacetime basis there will be adequate opportunity, within the broad outlines of Federal action, for all to play a part to the full extent of their willingness and ability.

Thus there exists today a challenge to provincial and municipal governments to consider what projects they can plan for the immediate post-war years, to consider how those projects may be financed and to draw up detailed plans for them. There exists a challenge to industry to plan for the speediest possible conversion to peacetime production at the end of the war, to plan for the utilization of the maximum number of present employees during the change-over period. There exists a challenge to labour to plan how it may best contribute to the successful bridging of the gap between war economy and peace economy. Finally, there exists a challenge to every individual in this Dominion to make his personal plans for the post-war years; to save every cent he possibly can now so that he may thereby be in a position to make the maximum contribution in maintaining purchasing power after the war; to understand and to assist others in reaching an understanding of the problems the end of the war will bring and an understanding of the measures necessary if we are to successfully combat those problems.

MECHANICS OF POST-WAR PLANNING

Ignoring for the moment the temporary boomlet that might develop as it did in 1919, the great need upon the cessation of war will be some action to replace the purchasing power withdrawn as war production slows down and comes to a halt. That purchasing power can be provided, in the first instance, only through continued heavy taxation and borrowing by our Federal Government with the proceeds being made available, through various forms of public projects, to the men and women released from war industry and to the demobilized members of our fighting forces.

Upon the vision and intelligence exercised in selecting and carrying out the projects will depend the extent of the contribution of post-war spending to the future well-being of our nation. A discussion of the merits of the various channels into which this spending might be directed is outside the scope of this paper, but it is suggested the following are worthy of serious consideration: The erection of modern, low-cost housing to be made available to purchasers on easy financial terms —the provision of courses of training designed to fit former war industry workers and demobilized members of the fighting forces for more

highly skilled peacetime pursuits (so far as members of the armed forces are concerned, extensive plans along these lines have already been developed)—the elimination of congested urban residential areas—the construction of modern highways and airports — the more adequate provision, in the field of agriculture, of the knowledge and equipment required if this important part of our economy is to make the full contribution of which it is capable.

Thus we should have, through governmental action financed by taxation and borrowing, the effective purchasing power of the nation maintained at a level proper in relation to the flow of goods and services. The shock of the first impact of the cessation of war upon our economy would thereby be taken up. Further, and more fundamentally important, conditions would be set up favourable to the early and speedy change-over of industry to peacetime production. Prospects for business would be sound and private capital would thereby be encouraged to take up again operations interrupted by the war. Private capital would also be encouraged to flow into those new fields of industrial activity which the war will almost inevitably uncover.

Insofar as prices are held steady throughout the remainder of the war, we could afford to allow a period of moderately rising prices to get under way in the post-war period. This would further improve the prospects for business and would tend to hasten the transition to peacetime operations. In addition, moderately rising prices would tend to cut down the burden of carrying charges on our funded debt and the burden of eventual repayment of the debt. One of the results of the war may be the acceptance of such action as lying within the bounds of orthodox governmental finance.

To further hasten the conversion of plant to peacetime requirements, we must be prepared to help finance the change-over where necessary. If private capital is not readily available, the Federal Government must be prepared to assume the task on the basis of a loan or outright grant as the circumstances may require.

With industry swinging into peacetime operation, and expanding its payrolls, the extent of government provision of purchasing power could be correspondingly reduced with a consequent lessening in the amount of taxation and deficit financing required. Gradually as the transition proceeded a return to more "normal" conditions with respect to taxation and governmental controls could be permitted.

CONTINUANCE OF CONTROLS AND TAXATION MUST BE ACCEPTED

That it will be highly desirable and necessary to continue even beyond the immediate post-war period, many of the controls developed during the war years few, I think, will dispute. A consideration of the whole complex pattern of our economy after this war opens up a field much broader and more far-reaching than this paper pretends to cover. It is a field to which the thought of our best minds must be applied. It is a field the outlines of which will almost certainly become more clear to us through our experience in the war and the immediate post-war period.

SAVINGS CANNOT BRIDGE THE GAP

No doubt the point will be raised that unemployment insurance and the wartime accumulation of Savings Certificates, forced savings and bonds are designed to cushion the shock of the post-war period and that we can safely leave to them the task of maintaining purchasing power. The fallacy of that argument becomes apparent when we examine these so-called cushions.

The unemployment insurance plan we have set up is not intended to and is actuarially incapable of providing a bulwark against the type of emergency unemployment that will develop when the war comes to an end. Its function is to provide for those relatively small fluctuations in employment incident to the changing of the seasons, minor business recessions and so on. A consideration of the small size of the benefits payable dispels any hopes regarding the ability of unemployment insurance to replace, to any material extent, the purchasing power removed at the end of the war with the cessation of governmental spending.

While the function they perform in cutting down civilian consumption and providing funds for the prosecution of the war is most important, care must be exercised not to overemphasize the part War Savings Certificates and forced savings can play in tiding our economy over the post-war period of adjustment. Certificates were being purchased in September 1942, when the new income tax and forced savings schedule went into effect, at the rate of something under 100 million dollars per annum. The War Savings campaign got under way in May 1940, and by September 1942 there was an accumulation of some 200 to 250 million dollars in certificates.

In his budget address on June 23rd, 1942, the Minister of Finance stated: "It (the new income tax schedule) would also impose a minimum forced savings requirement of about 250 million dollars in addition,

but we must expect a very substantial portion of this to be met by the alternative contractual forms of saving (life insurance premiums and payments on mortgage principal), leaving possibly 125 million dollars as the yield of refundable taxes (forced savings)."

While every effort is being made to maintain the volume of War Savings Certificates purchases, many taxpayers have been compelled, because of forced savings and higher taxes, to discontinue or reduce the scale of their buying and as a result volume of purchases of War Savings Certificates has been reduced to some 50 million dollars per annum. Thus forced savings plus War Savings Certificates might approximate 175 million dollars per annum and by December 1944, assuming the war lasts another year, a total accumulation of 600 to 650 million dollars in certificates and forced savings might be anticipated.

It would be unwise at this stage to hazard a guess at the amount of purchasing power the end of the war, with the termination of war production and war employment, might be expected to withdraw from the market. With over 50% of our national income of 9,000 million dollars odd currently devoted to war and with our economy becoming increasingly geared to war production, it isn't difficult to conceive how 650 million dollars of War Savings Certificates and forced savings might be but a small post-war purchasing power replacement factor. While a breakdown of the status of those buying War Savings Certificates is not available, there is every reason to believe that a large percentage of the total is purchased by citizens other than those who will feel the immediate impact of post-war unemployment. The efficacy of the Certificates as a post-war cushion is, of course, reduced by the extent to which they are not the property of that portion of the populace which will most urgently require them.

Finally, there is a less tangible but nonetheless real weakness in the argument that War Savings Certificates and forced savings can be a large factor in tiding over the post-war period of dislocation. It is the fact that immediately regular income ceases there develops automatically a tendency to make accumulated savings spin out as long as possible. That means a worker, employed during the war at a wage of \$30.00 a week, will not spend at that rate, when he becomes unemployed, any certificates and forced savings he may have accumulated. He will rather cut down drastically on day-to-day expenditures and will eliminate entirely normal replacement expenditures that would otherwise be made. Whereas he has spent \$30.00 per week out of income he will spend probably \$15.00 or \$20.00 per week out of accumulated savings.

Thus the potential ability of War Savings Certificates and forced savings to compensate for the reduced purchasing power resulting from post-war unemployment is further diminished.

While a substantial volume of potential post-war purchasing power has been built up in the form of holdings of war bonds by individuals, it is subject to the same limitations outlined above in connection with War Savings Certificates. A very large part of the bonds purchased during the war is in the hands of persons not liable to loss of employment when war production ceases. Furthermore, as we have seen, accumulated savings, whether they be in the form of bank deposits, War Savings Certificates or bonds, cannot be regarded as a satisfactory substitute for current income in maintaining purchasing power.

PUBLIC APPROVAL MUST BE SECURED

Planning the attack by our Federal Government upon the problem of the post-war transition period and developing the instruments for the attack are most essential. The plans we may lay and the mechanisms we may develop, however, will represent just so much wasted effort unless steps are taken also to ensure that their application to the problem is permitted. The most carefully conceived plans will have absolutely no value if, at the end of the war, public opinion through lack of understanding or through prejudice will not allow them to be introduced. It is a vital part of our planning for the post-war years that we clearly impress upon business, labour, racial and religious groups, Provincial Governments and individuals throughout the Dominion, first, the absolute necessity of comprehensive measures to combat the dislocations of the post-war period and, second, the soundness and equity of the plans conceived and the manner in which it is proposed to apply them. It is most essential that we thoroughly imbue our populace with a proper understanding of the grave dangers of the post-war period and the necessity of lending to the combatting of those dangers the same enthusiasm and co-operation which is demanded by the war. It is most essential that the people of the Dominion be made fully aware of the fact that the end of the war must not, if we are to avoid disaster, be the signal for the immediate termination of annoying controls and burdensome taxation. It is most essential that, through the sound presentation to them of the facts of the situation, the people of the Dominion shall be led to a wholehearted acceptance of the absolute necessity of continuing into the immediate post-war period many of the controls and burdens of wartime.

We have seen, in the past four years, how world events given the

most widespread publicity through the press, the radio and public utterances, have led to a ready acceptance of necessary wartime controls and taxation. Unfortunately there are not, and it seems apparent there will not be, any spontaneous forces moulding the opinion of the people of Canada into ready acceptance of post-war controls and heavy taxation. The preparation of public opinion for a post-war tightening of our belts is a cold, hard, uphill task which must be tackled with vigour and imagination. It is a task which cannot be accomplished in a matter of days or weeks. It is a task of such importance that we cannot afford to gamble on the length of time that will be granted to us for its accomplishment. If the war should last another two years that would not be too much time for the sound preparation of public opinion. We must set to work on the job immediately since none can foretell when this war will end.

WAR MORALE

Now there are those who will say that to tell our people at this stage that the end of the war will not usher in a new heaven and a new earth will lower their morale, will hinder the war effort. They will point to the fact that practically all the extraordinary measures introduced since September, 1939, have been based on the distinct understanding they are for the war period only. I say that if some of our people have been lulled into a state of slumber by the constant use of the phrase "for the duration," it is an uneasy slumber. It is a slumber disturbed by nightmares in which the horrible spectres of the great depression of the 1930's slink across the scene; nightmares which have as their accompaniment the steady, persistent, and growing beat of industry increasingly geared to war; nightmares which always end with the clamour of war industry stilled and with unemployment, depression, grief and strife pervading the scene.

Far from being destroyed, war morale would be strengthened and invigorated by a reasoned presentation of the post-war problems and the means that must be taken to combat them. It is a well-recognized tendency of we humans to naively assume that bad news must be broken gently to our fellow men, that they do not possess the courage and the moral fibre required to withstand the full and sudden impact of the harsh realities of life. If there is one thing this war has proven, it is that the ordinary citizen of a nation can and will take magnificently the buffettings of troublous times, provided he is convinced everything possible is being done to combat them and bring them to an end. It is he who pays the bill when things affecting the balance of our economy are improperly done or are left undone, and by the same token it is he

who is primarily concerned in seeing that any course of action, required for the well-being of our society, is undertaken. A reasoned exposition of the post-war problems and how they must and will be attacked and solved will cut through the veil of uncertainty and fear on that score which at present shrouds the minds of our people and reduces their ability to concentrate on the task at hand.

In the above, I have attempted to outline the nature and magnitude of the problems which will confront this nation at the end of the war. I have attempted to show the consequences of failure to meet those problems with forethought and courage and with all the resources at our command, including the whole-hearted co-operation of the entire nation. I have attempted also to sketch in very general terms how these problems can be met and conquered. Out of the whole there develop certain obvious and clear-cut suggestions which may be tabulated under the heads: Public Relations; Planning and Organization; the Legal Aspect.

PUBLIC RELATIONS

It is essential that a widespread educational programme be instituted immediately by our Federal Government, by our Provincial and Municipal Governments, by labour and business organizations and by individuals through the press, the radio, and the spoken word. The aims of the programme must be, first, to thoroughly imbue all individuals and groups of every description throughout the length and breadth of the Dominion with a sound knowledge of the problems with which this nation will be faced at the end of the war; second, to make clear the dire consequences of failure to meet and conquer those problems; and third, to explain and secure popular approval of the measures that must be taken to combat the challenge of the post-war period. It must be the aim of this educational programme to thoroughly demonstrate that the war and the post-war readjustment period, from the standpoint of our domestic economy, must be regarded as one and the same thing and that many of the controls, a good deal of the delegation of authority to the central government and a large measure of the burdensome taxation adopted during the war must be carried over into the immediate post-war period. The educational programme must so thoroughly do its job that at the end of the war those things necessary to smooth the painful trials of the post-war readjustment may be instituted without delay and with the whole-hearted co-operation of all our people.

This vital job of merchandising the post-war programme to the nation must be set in motion without delay. It cannot be completed in

a day, or a week, or a month. It is so vitally important that it must be relentlessly pursued until the end of the war regardless of how far-distant that may be.

PLANNING AND ORGANIZATION

A Parliamentary Committee under the chairmanship of J. G. Turgeon, M.P., has been set up by Ottawa to enquire into the problems of the immediate post-war years and to consider how those problems may be solved. Under the chairmanship of Doctor F. Cyril James, of McGill University, an Advisory Committee on Post-War Reconstruction and Rehabilitation has prepared and has submitted to the Cabinet certain views and recommendations.

The work of the two committees should, and presumably it will, result in the formulation at the earliest possible date of a broad plan of attack on the problems of the immediate post-war years and in the laying of the groundwork of the organization required to institute and operate the plan.

The committees, or some counterpart of them, must in addition accept the responsibility for two other most vital aspects of our post-war planning. First, the task of providing information and direction to those agencies undertaking the all-important job of convincing the nation of the necessity, the soundness and the equity of our post-war programme. Second, we must have some central organization whose work it will be to assist and co-ordinate the activities of the municipal, provincial, business, labour and academic bodies working on various phases of post-war planning.

THE LEGAL ASPECT

Most of the extraordinary measures instituted by the Federal Government in its conduct of the war have been under the authority of the War Measures Act of 1927. When a sufficient degree of public approval has been developed as a result of the educational programme outlined above, legislation must be enacted in the form of an amendment to the War Measures Act or in the form of a new Post-War Measures Act providing Ottawa with the authority necessary for the prosecution of the post-war programme. To the extent that there may exist the fear that the controls and centralization of authority in Ottawa may tend to become permanent, it may be advisable to place a definite time limit of, say, three or four years on the life of any such legislation. To the extent that enabling legislation on the part of the Provinces may be necessary to implement and reinforce the Federal legislation, it is essential that it also be enacted just as soon as public opinion shall be sufficiently prepared.

A MANAGEMENT APPROACH TO POST-WAR MANPOWER PLANNING

CLARENCE FRASER and H. G. KETTLE

Foreword:

This article starts by painting a general picture of current and projected manpower conditions in Canada. It seeks then to present a method for dealing with the placement and continuing development of the worker. It has as an objective "A plan for every man developed and applied with him."

Some readers may say "This approach is too narrow. It fails to consider the total social and economic situation." To this we answer, "True, the focus is narrow, but we have made it narrow to throw the spotlight on the person most concerned — the individual. If this simple objective is sought, all else will follow."

Some others may say, "It isn't practical for my enterprise." To this we answer, "We have tried it in big and small enterprises — in companies new and old. And it has worked in every one."

Still others may say, "It is too complicated for enterprises that have no highly developed personnel departments." To this we answer, "We have applied it mainly through men who have had no specialized personnel experience."

The method is not final in detail. But it is complete in its fundamentals. Our judgment is that the manpower situation cannot wait for final solutions developed in closed laboratories. Our answers must come out of daily growing experience built out of joint thinking and joint action.

THE problem of returning Canada's manpower to peacetime work may be viewed in two related aspects, first, the problem of Economic Integration and, second, the problem of Social Integration.

"The fundamental labor problem for industry amounts to this: Industry represents the most comprehensive form of social organization in the modern world. And the leaders of industry, from the president of the largest corporation to the junior supervisor of a small shop, have a twofold duty to perform; the first is to apply their professional, logical skills to the furtherance of their economic objectives; their second task

is to encourage, maintain, and direct inter-personal relations, for these provide the satisfactions which alone can hold the society together, and so retain the possibility of economic efficiency."¹

While the planning of the future of any single industrial unit, such as the approach demonstrated by the General Electric Co. "An Approach to Postwar Planning" must necessarily precede manpower planning, we realize that eventually the planning process must get down to the individual — to John Doe. Whether John Doe is a skilled mechanic still on his peacetime job, or a gold miner who has moved into a steel plant, or a pilot who has yet to return to civilian life, makes no difference in our basic approach. As a general objective and as a measuring instrument to indicate the degree of success achieved in planning the placement of the individual, we offer this definition:

A complete placement is considered to include:

- (a) introducing the individual to the kind of work and grade of work, to the kind of enterprise, to the kind of community for which he is suited, in which he is interested, in which there is opportunity for his present services and future development, and
- (b) ensuring his complete integration into that network of human relations of which the work situation is composed.

More concretely, therefore, our objectives should be, first, to have the right man, in the right job, in the right place, at the right time — this is the normal desire of management. Second, to aid every man to develop to the limit of his capabilities, interests and opportunities — this is the normal desire of the individual worker. Third, to ensure that every entrant into a working group adjust himself to the demands of the new work situation and be welcomed by the group as a member of the team — this is the normal desire of management in "producing as cheaply and efficiently as possible," and of the individual worker in pursuit of happiness derived from social acceptance on the job.

Our Current Manpower Situation

After concentrating our industrial war machine mainly in the St. Lawrence Valley — diversified in Ontario and more highly concentrated in Quebec,² — we have reached a stage of relative manpower equilibrium in a state of relative total war, based on a technological revolution

¹From article "Human Relations within Industrial Groups" by T. N. Whitehead, in *Harvard Business Review*, Autumn, 1935.

²See industrial hydro-electric power consumption trends.

throughout an industry of mass production in which our sub-contractors far outnumber our prime contractors. We have diluted and downgraded our work operations to permit rapid absorption of unskilled workers.

In four years of industrial expansion we have practically completed the three stages of mobilization, utilization and stabilization. But our mobilization of industrial manpower has been patchwork — our utilization well below our potential in probably 85% of our war industries — and our present stabilization (considered in terms of occupational stability, organizational stability or regional stability) is a very temporary equilibrium, bound to disintegrate into another period of flux.

Against that picture of present industrial manpower must be placed the picture of the hundreds of thousands in the fighting forces. With mechanized warfare we have, in the fighting forces, by contrast with mass production war industry, upgraded our skills, especially in the mechanical and electrical trades. These men and women have been guaranteed by the Government their future re-establishment in civil employment "under conditions not less favourable than would have applied if they had remained in that employment."³ The masses of women workers in war industry diverted from household occupations and the masses of men and women who have migrated from Northern Ontario to Southern Ontario, from the prairies to the industrial East — these persons have not been guaranteed such reinstatement. Some have jelled into their new occupations,⁴ their new enterprises, their new communities, but for many the future is uncertain. This is a serious threat to social cohesion on which our economic life depends.

Postwar Placement

As the war ends, we shall be swept out of our present state of relative equilibrium into a state of economic and social dislocation where, within a very short interval, we must be ready to direct the movement and placement of probably 1½ million people into changed occupations, changed enterprises and changed localities. We shall have on our hands that many tailor-made placements to create — no two exactly alike.

³Civil Employment Reinstatement Act, 1942.

⁴For evidence on resistance to change see book "Management, Labour and Technological Change" by J. W. Riegel—"When skilled workers were displaced, it was not easy to provide jobs for them. Many of them refused to accept less skilled work. They did not wish to sustain reduced incomes or to be identified with semi-skilled workers. Thus, social stratification among employees interfered with their readjustment to technological change."

Techniques

To do this job, industrial management will depend on the techniques it has learned in part during the past four years in building up its manpower. First, it must know the Current Placement Status and the Placement Potential of every present worker, out of which it can derive planning and control data in terms of its Manpower Potential. Second, it must identify Work Opportunities for every worker. Third, it must make a short-range Placement Plan for every worker. Fourth, it must win the acceptance of every worker and probably the acceptance of the labour union to its plan. In addition to planning for its war industry workers, industry must be ready to bring the people in the fighting forces back into civil life with due regard for their pre-war experience and their skills derived in the fighting forces. The Government is prepared to supply the latter information. All this will require on the part of every industrial enterprise:

1. A Placement Policy.
2. A Placement Organization, probably the Employment Division of its Personnel Department, working with the Manufacturing Department, the Planning or Production Control Department, the Industrial Engineering Department, and probably with representatives of the workers concerned.
3. A Placement Program, including timing of placements and associated training.
4. A Placement Procedure, including individual case records.
5. Control data showing actual vs. potential vs. planned Stability Factors, Flexibility Factors, Mobility Factors.⁵

Case Situation

The use of the "case" method in teaching business administration has been found successful at the University of Western Ontario, at Harvard University and at other educational institutions. Accordingly, the writers of this article judge that a brief description of a case situation in manpower planning will help the reader to reduce the general ideas already offered to terms of practical application.⁶ The

⁵For popular treatment of this theme see article by Clarence Fraser in Canadian Business, October 1942, "The Pull of the Long Pull in Developing Manpower." For more technical treatment see paper by Clarence Fraser in Advance Management, issues July-September and October-December, 1942, "Personalizing the Process of Placement".

⁶As an aid in practical application see "A Check List for Plant Management" for use in checking the efficiency of a plant or specific departments in the utilization of manpower issued by Industrial Relations Section, Princeton University, July, 1943.

techniques described are those used with success in moving green manpower into new occupations, into a new enterprise, into a changed locality. We believe these same techniques, modified to suit variances in situations, can be used in postwar manpower planning, whatever the new occupations, enterprises or localities may be.

The Case History

The particular situation to be described involved the building up of production on wing A. The wing was already being produced with a skeleton crew, and the plan called for increased jigs and a rapid expansion of manpower. This manpower was to be partially drawn from men and women then engaged on the Anson wing but, owing to certain changes in production, it was found possible to release some hundreds of workers for wing A production. It was also to be drawn from the Pilot plant, and any balance still required had to be hired at the gate.

The two jobs were in different buildings, were both largely wooden construction with some metal assembly, were fundamentally similar in the kind of craft involved, but with fairly considerable variations in the required physical ability and degrees of skill, and in the techniques used.

The problem was in simple terms: Who and how many were needed and come from where? How good are they and how good must they be? What and how must they be taught? and where do we put them as individuals?

The general foreman has consistently been faced with solving this problem, and any good foreman arrives at a solution by applying common sense, his experience and judgment. He mentally balances and assesses all the factors, with possibly a few simple arithmetic jottings. There is nothing new in the more elaborate treatment which follows. It is only a paperwork extension of the foreman's common sense, but obviously a very necessary elaboration when one is dealing in quantities which make any mental assessment a physical impossibility, and with such a wide range of individuals that their capacities can only be known by a group of foremen.

The Old and the New Job. Job Analysis

It so happened that shortly before the transfer, some work had been done on a job analysis of both wing A and wing B, and subsequently men and women on both jobs had been classified.

The job analysis took the form of several main departmental flow charts of group operations with horizontal levels from unskilled to skilled, and vertical flows through operations which possessed certain common factors and which showed the possibility of progressive training. The group operations were boxed, but were themselves broken into detailed operations arranged in order of skill. The charts therefore not only indicated skill levels but also suggested the most natural and logical progression for a training programme, and they were in fact developed largely for this purpose. The charts were divided into wood and metal operations. Also, since each group operation contained one or two simple jobs, these were taken out and grouped separately at the bottom of each box in order that the general flow for the whole chart from unskilled to skilled would not be broken.

What Have We Got and What Do We Want? Classification

The classifications wanted had to show the present current capacity of the workers to be transferred, and the classifications of the gaps to be filled in the new job. These classifications were available, having been made for the purpose of hourly ratings, and based partly upon the Job Analysis Charts. It is true that being made for hourly ratings, they were assessed on the basis of the job the man was doing and not necessarily upon the man and his actual skill, but being in a period of expansion and manpower shortage with the available skill stretched to the limit, the two classifications tended to coincide and served our purpose well enough.

How Many Do We Want and of What Kind? Estimate and Analysis of Manpower Required

The estimate of manpower required was done on specially prepared Manpower Estimate and Analysis Sheets, which took each group operation, gave certain time study data where available and noted the production of wings required per shift. It recorded:

1. The present wing A manpower.
2. The manpower required, as indicated by past experience and time study data.
3. Those available from the Pilot plant.
4. Those available from wing B plant.

Each of these items was shown broken down into men and girls, into shifts, and into classifications from D. — A. and journeymen.

Finally, by the process of addition and subtraction, the last line gave the number, still to be hired from outside, broken down in the same

detail. Management was not so naive as to assume the probability of being able to hire the particular brand and flavour we desired, but it at least showed the subsequent training programme that would be needed.

In parenthesis it is worth noting that the estimates of manpower required on wing A production, as obtained by using these sheets, were low and somewhat startling. It was assumed for the basis of calculation that there would be no material shortages or other lost or waiting time, and subsequent events proved the original estimates to have been remarkably close.

Where Are We Going To Put Them? Placement

So far we had been dealing in symbols and codes and figures. Finally we come to consider them as individuals, the placing of the right man in the right job, in the right team, and allowing for future expansion.

The paper work here called for Manpower Control Sheets, which were headed by the total group operation requirements in classifications for a set production, followed by columns for the names of the skeleton crews, the individuals actually engaged in them at that moment. The gaps had to be filled in such a way as to obtain maximum efficiency, with consideration of both technical and human values.

On the technical side the wood and metal workers were separated and on the basis of the job analysis their past experience and the new experience required were matched up. On the personnel side the transfer was discussed with each individual, and consideration given to shift placement in connection with transit control.

There was one additional feature of some interest. In the original classification there had been in each case a qualifying code letter which assessed the employee's potential, how far he had reached the limit of his abilities, and this was expressed as "D" for Develop, and "R" for Retain. The control sheets were arranged to include this factor, thereby indicating the stability of each group, and supplying the basis upon which subsequent progressive upgrading and intergroup transfers might be made.

Training and Placement

Some 400 workers were transferred in this way, about 200 being placed directly in production with training-on-the-job, and the other 200 going into the Plant School where they were earmarked for par-

ticular groups and trained in these special operations. With the selection of the kind of operations and with the development of training mockups we are not immediately concerned, though it was obviously a vital part of the whole scheme.

Is There a Moral?

So much for the case history. Can the same techniques be used for handling hundreds of thousands under postwar conditions instead of some 400 under wartime conditions? We believe they can, since although the postwar conditions will be of immense complexity and contain added factors, yet the problem is fundamentally the same. The five steps of Job Analysis, Classification, Estimate of Manpower Required, Placement, and Training and Placement, are basic to any large scale transfer. Moreover we believe that while, until the future national and international economic pattern clarifies, it is clearly impossible to work on some of these steps, yet there are others where it behooves us to prepare the ground now by gathering together our documentary information.

With all due respect to one sage, it is sometimes worth while to cross one's bridges before one comes to them, or at least, granting respect to another sage, to look before one leaps. We know the country we have lived and travelled in, the valleys and hills, the bogs and pitfalls, and we know the bridges we have built to make travel smooth and reasonably safe. But we know that corrosion and volcanic rumblings and eruptions have occurred; our background has changed. Whereas our bridges were previously designed to carry comparatively small industrial loads, mostly male, we shall in the future have to think of very much greater loads of both sexes. Maybe where there was formerly a level plain there is now a marsh. Maybe we shall have to repair and strengthen the old bridges, maybe build new ones.

Leaving the metaphor, it might be useful to examine the conditions under which our case history occurred, to see how conditions have changed since then, and to consider what they might be in the postwar period in industry in general.

First, the transfer was demanded from a manufacturing point of view since it occurred early in 1943 when there was a rapidly increasing production schedule, or an expanding market. Further, the emphasis at that time was on production, more and more production, with rather less emphasis on cost. Under those conditions certain features of the transfer, such as training and internal movement, which might have

in normal times been regarded somewhat doubtfully from a cost stand-point, were accepted as inevitable.

Second, there was a very emphatic manpower shortage, and a condition when the skills available lagged behind skills required. It was essentially a period when training and upgrading were imperative. It was obviously essential to utilise the full potential capacities of employees to the limit and this could only be done by progressively training those currently employed with subsequent internal movement between groups, and by training and sifting in at the lower skill levels whatever outside help was available. There was, therefore, little resistance to the idea of this movement from a manufacturing point of view, and little resistance from the employees' point of view since it meant upgrading and the probability of higher wages. Now, in what is in some ways an intermediate stage, the market is no longer expanding in many instances and cost has become of considerably more importance. There is now no longer a long range objective in mind, and any short range manufacturing view is inevitably and naturally suspicious of internal movement which may temporarily check and disrupt mass production methods and costs.

Perhaps even more significant is the change in the technological character of the job and this applies very generally to industry. In the demand for urgent production, more than ever before, every mind and hand has been used through Employees' Suggestion Committees, etc., to simplify and breakdown. Templates, jigs, and patterns have performed miracles, but they have changed the levels of skill required. The general level of versatility required, of all-round competence in the sense of a master mechanic, has dropped. War emergency training, particularly in the field of female employees, has shown some extraordinary short cuts to training of a limited and specialized character and which has proved sufficient. Work formerly requiring a journeyman could now be done by men who, in terms of an apprentice-master scale, must be called semi-skilled.

With this technological change, the question of classification presents some difficulties. Originally a man may have been classified as a journeyman on the basis of the job he was performing. This job is now simplified, possibly all the jobs requiring journeymen are filled. Normally, he would move elsewhere, but it is conceivable that the same conditions might apply throughout the industry. Classifications based on the job performed would now differ widely from a classification of

the man's current potential. For the purpose of any transfer we want the latter, so that if we need also a classification tied to hourly rates, we should have to have two separate classifications.

It might be said that the normal operation of supply and demand would eliminate this condition, but it is our view that this may not be the case. When one considers the vast amount of training and upgrading in industry and the equally impressive technical and general educational training in the armed services, particularly in the Air Force, and when one considers against this the steady technological pressure towards lower skilled levels, it may well be that we shall find ourselves with a surplus of skill over that required. It is possible that a tendency towards and a combination of piece work and incentive plans may solve the classification difficulty, but there may still remain a problem of social integration if we are to achieve "the completed placement" defined earlier in this article.

We have been considering the tendency in this intermediate phase. What of postwar conditions? The transfer must be made; it will be demanded both by the manufacturer who once again has at least the immediate expectation of expanding markets, and, of course, by the public, both civilian and services, in its urgent desire to return to peacetime production. In this respect, there is the same urgent demand in both the case history and postwar periods; but in all other respects, the changes away from the case history conditions as noted in the present intermediate phase will have become accentuated. There will be a manpower and certainly a womanpower excess, a possible excess of skill, a greater piece work tendency, a competitive cost, a tendency for rates to be pressed lower by downgrading of the skill required.

Can the transfer work against this changed background? It *has* to work, and the basic steps we have outlined must be taken in this or some similar way, but the landscape obviously needs a thorough survey and, if we are to cross our bridges, we obviously need to build a few new ones.

OUR NATURAL RESOURCES AND CANADIAN- AMERICAN ASPECTS OF THEIR CONSERVATION

JOHN D. DETWILER

President of the Canadian Conservation Association

INTERPRETED freely, the subject matter of this article might well fill a book, but such an extensive treatment is far from the writer's ambition. It would, indeed, be preferable not to mention our natural resources specifically but it is realized that even a general knowledge of them cannot be taken for granted. In dealing with these resources, however, only such detail as will lead to a sympathetic understanding by the peoples of both countries will be given. The prime objective is an appreciation of the mutuality of our conservation problems.

Without doubt Canada is well endowed by nature. Our public speakers have descended on this for years; and abroad our natural wealth has been envied by not a few. Today, however, we hear less of the old-time optimism, and with reference to other nations we hope that the new-found brotherhood, born in travail together, will not be sacrificed to selfish national advantages.

THE SOIL AND ITS CONSERVATION

Canada is an immense country—proverbially so. Our landed expanse covers 3,700,000 square miles (in round numbers) and as such exceeds the area of continental United States (exclusive of Alaska) by some 500,000 square miles. The incomprehensibility of these figures is not a matter of concern, but what is, is their possible misinterpretation. Of this huge area only 16% is agricultural and of this, again, nearly half is still forested.

Until our West was opened up, and much of the sod should never have been broken, our farming land hugged the international boundary rather closely, and in many places to a very limited depth. This land, like that just across the border, is of glacial origin and often rolling. In the West, the bordering strip is wider and the topography again very similar to that of the contiguous States.

With us, as in the United States, the conservation of the soil is a

much discussed problem; but the Americans are doing more about it. Before going further, however, may I say by way of explanation, that by conservation of the soil I include its fertility as well as its substance. With us the problem is in the main approached by way of the soil. The soil is in effect a victim and it is time that we concentrate some of our efforts on the agent. The agent, that is, the farmer, will no doubt protest, and indeed does protest, that he, too, is a victim—a victim of a vicious economic system that denies him profitable returns. Be that as it may; I am not an economist but I doubt if the diagnosis is quite as simple as that. At all events, it is not quite so impersonal. What the farmer sees and blames is largely a symptom, not the cause—a symptom that unfortunately aggravates the cause.

By and large, farming is, with us (but this is not peculiar to us) a "way of life" of ancient vintage. It, more than any other occupation, has retained its primeval nature of patriarchal self-sufficiency—a manner of living that developed a rugged individualism which in its intimate association with Mother Earth proved very enduring. This association was natural and effective but, in its primitive form, is now quite out of harmony with the times. Business—indeed progressively bigger and bigger business—is the urge of modern society. Many from off the farms have been caught up by this urge and have left behind on the land not a residue entirely but a reminder, most of which has been unable to adjust itself. This circumstance and the fact that the soil will tolerate a longer period of "operating on a deficit" for a given capital than any other occupation, have, I think, been largely responsible for the present situation. Furthermore, with respect to the oft-repeated slur on farming as tolerating "operation on a deficit," I should like to add that farming does not enjoy a special dispensation along this line. *Quid pro quo* applies in agriculture as well as in any other business. What such farming does is to draw on the nation's reserve capital, the fertility of the soil. This is what disappears in the transfer of values from one side of the ledger to the other.

As intimated above, some farmers have attempted to adjust themselves to modern trends. They have realized that the world's supply of the products of the farm must be assured; that society can no longer be at the mercy of unplanned surpluses—surpluses arising as by-products of a primitive "way of life". They have also accepted the tools that industry has offered for production on a larger scale and have mechanized their farms. This demand and the expense involved in mechanization have further alienated the non-progressive farmers, the problem group,—the group that would be speedily liquidated in any other

business. The sooner we come to realize that agriculture is an industry, governed by the principles common to all commercial enterprises, the sooner we shall make the fertility of our soil secure. The failure to keep pace with modern trends is, I think, at the root of our agricultural problem and much of the consequent abuse of the soil. I should like to add further that no artificial devices, such as subsidies, in whatever form—not excluding unilateral price elevation of farm products—will succour farming and re-orient it as a modernized way of life. It cannot prosper on the “dole”.

But to return to the soil, and more particularly to the depletion of the soil through erosion: With us the rivers and the streams that collect waters from the fields run muddy after heavy rains but, in general, not as seriously so as the United States at large. Perhaps this accounts for (but does not excuse) the almost complete disregard of the practice of contour farming, and strip-cropping (except in the Prairie Provinces) to hold the soil in place. Our soil is nevertheless working sea-ward. A few years ago, in May of 1941 to be specific, and after a heavy rain, I carried out an experiment to determine the load of silt the Thames River carried as it flowed through London. Weighings showed that some 52 tons of soil per hour passed us in London on its way to Lake St. Clair, some 65 miles distant. This was enough to remove at least three-quarters of an inch of top soil from 100 acres of farm land in 24 hours. The area involved was only 685 square miles and did not represent our most erodable soil.

In our Prairie Provinces, however, the seriousness of the situation, as it developed during the drought years, forced us to act, just as it did in the United States. And here the P. F. R. A., as we familiarly call the Prairie Farmers Rehabilitation Act, did, and is still doing, an excellent job—a job of soil conservation and reclamation, and of human readjustment. Not only is soil-drifting—the western type of soil erosion par excellence,—being brought under control by strip-cropping, ploughless fallow and other cultural methods, but the whole picture of the utilization of human values is being redrawn, a result, one might say, of the security obtained through the programmes of the P. F. R. A.—those of Land Utilization, Water Development, and Cultural Practices.

In its accomplishments, the P. F. R. A. may well be compared to the Soil Conservation Service of the United States, and merits, many of

us think, a correspondingly wide operational field, that is, the whole of Canada.

In the Soil Conservation Service the organization of Soil Conservation Districts has always appealed to the writer. In the P. F. R. A. we find a somewhat parallel development. Here, with the object of securing co-operative action in the solution of soil drifting and other drought problems, Agricultural Improvement Associations were organized. In general, the area represented by an Association is equivalent to a rural community. Membership is generally, but not exclusively, rural. Urban representation has at times been found to be advantageous. Such organizations tend to substitute community effort for the old-time, single-handed struggle in a changing world. According to the 1942 P. F. R. A. Report, 228 A. I. A.'s (as the communities are called) have been established. These represent a membership of 35,800.

THE CONSERVATION OF WATER RESOURCES

Attendant to and inseparable from the problem of soil conservation is the conservation of water. In this liquid resource, our two nations find more immediate points of contact, more joint ownership and more demands for co-operative action than in any other of our natural resources. In the past, our two governments have confined themselves chiefly to agreements on water levels in boundary waters; levels as influenced by diversion of water whether for sanitary purposes, power, shipping or for irrigation. In all this, we have failed to realize that the unseen water levels, those in the ground, are equally important and I believe that, beginning first with contiguous agricultural areas, we should apply ourselves jointly to the maintenance, and elevation where necessary, of the ground water levels. This water determines not only the levels in our lakes and streams but also the crop returns from our soil. The law of nature that adjusts these levels knows no political barriers, neither do the levels. The principle that calls for community action in the building of dugouts and dams, in our West, likewise calls for the larger co-operation between our two countries. This applies to all watersheds we hold in common and presents a problem fraught with great possibilities both for co-operation and misunderstandings, encompassing, as it does, not only dams and dugouts, but forest cover as well, even soil cultural practices, in which our neighbors to the south excel, and the knowledge of which they have shared so freely.

At this juncture, attention might well be drawn to the excellent beginning our two peoples have made in the conservation of water through the organization known as "Ducks Unlimited". The practical

programme of this organization has not only produced ducks, where ducks grow, but as a by-product has proved to be a boon to agriculture in the West through its water conserving structures. "Ducks Unlimited" provides an unique example of international co-operation inspired and carried out by private citizens. It is prophetic, I trust, for only such co-operation as is based on the goodwill of the people will stand the strain the future will make on our two peoples. We are entering a new era (and let us hope it will not take another war to persuade us), an era in which rugged nationalistic individualism must give place to a larger concept.

There still remain two major natural resources that present a mutuality of interest and concern—one the forest and the other the mineral.

OUR FOREST RESOURCES AND THEIR CONSERVATION

Canada, as said before, is a land of tremendous spaces. Of its 3,694,863 square miles about 1.2 millions are forested. Only two other countries have greater forested areas—the U. S. S. R. and Brazil. But lest anyone should think of us as overendowed, we need but state that somewhat less than half of this 1.2 million square miles is unproductive forest, and of the remaining half about 50% is considered inaccessible from the point of view of the forest industry. This leaves a final residue of about 430,000 square miles of harvestable forest resources. But in the event I have presented my case too well and, lest anyone should think us forest-poor as a result of the fractionation process to which I have subjected our 1.2 million square miles of forest land, I might say that this resource constitutes one of Canada's most important assets. The net value of our wood and its products is approximately 20% of the national income derived from all primary products of our national resources. In fact, the pulp and paper industry alone is the largest single-industry employer of labour in Canada. In peacetime it provides a direct livelihood to about one-half million of our eleven million people, although its average annual cut is only 28% of the total cut.

From this industry, however, many thousands are now serving in the armed forces or are on loan to the Government as skilled workers. This, and the "bottle neck" produced by the despatch overseas early in the war of the Canadian Forestry Corps, 7,000 strong and all woods workers, have seriously interfered with our output of forest products.

So much so that, if the current rate of consumption remains unchanged, the annual shortage for pulpwood alone will be in the neighborhood of 1½ million cords. This will necessitate drastic curtailment of present use, and the greatest possible speeding up of cutting, and of wise allotment. To this end the recent Order in Council placing pulpwood cutting in an essential category, will be welcomed. As it takes a year, however, to transport and process new cuttings, the present effort to mitigate the developing emergency will not be effective until 1945. Besides raising the priority rating of pulpwood cutting operations, the Government is also making a special drive to divert off-season farm labour to the woods, but here again we must bear in mind that farm labour is about 500,000 men short of the usual number. In the meantime we shall have to operate on last winter's cut, which unfortunately was 20% below requirements.

In the past the very vastness of our forest area has tended to postpone attention to proper protection and management. It is imperative, however, that we have done with that pioneering age of *laissez-faire* and its attendant abuses, and I think we are on the way. The picture is, however, not too bright. Over the ten-year period, 1930-1940, the annual depletion of our forests was 1.7% of the total accessible stand of merchandizable size. Of this percentage, forest enemies (if we omit man) account for almost 33%. Insects and disease consumed 700 million cubic feet, and fire 404 million—together accounting for 1 billion 104 million cubic feet annually. The enemy scourge has been fairly vigorously attacked by the Federal and Provincial Governments, but it is evident from the data that much remains to be done. This is purely a scientific and manpower problem. In this respect it differs from the problems attendant to the group we call the "utilizers". But in this connection we hope that the postwar period will witness a more advanced and vigorous forest policy. In this respect it may be said that long-time holdings by regionally and permanently established companies, like those of the pulp and paper industry, tend to favour conservation, if for nothing else, at least in self-protection. Baldly expressed, this is the objective in all conservation. It is an insurance. Like all insurance, it costs money—money that could not be found in a peacetime economy. Our recent experience in military finance, however, may have given us a new technique.

Now that the demands of the war and the scientific advances in new uses have re-established the inherent value of wood as raw material for industry, it is becoming clearer that an unfailing supply of our northern wood species will be vital to the needs of the United Nations

and the world for the years to come. The facts (1) that the United States and Canada consume more wood in manufactured form than the rest of the world combined, and (2) that, for Canada, forest products constitute essentially an export industry, place considerable responsibility on those in charge of public opinion on both sides of the line. The educators, or leaders of public opinion, must be imbued with the kind of statesmanship that transcends selfish national aspirations. The permanence of any co-operative programme must have the goodwill of the peoples involved.

Possibly the reference to the essentiality of the goodwill of the people may sound platitudinous. It must not be so construed, even in a general sense. In Canada over 90% of the total forest area belongs to the people since it is owned by the Crown in the right of the Dominion and the Provinces. As a matter of information it might be added further that rights to cut timber under lease have been granted to only about 14.5% of the total area and that 77.3% has not been alienated in any way.

THE MINERAL RESOURCES

I shall touch on this resource very briefly. It may surprise those of other countries to learn that in spite of our reputation for deposits of iron, oil, coal, gold, and latterly mercury, and the fact that we lead the world in the output of nickel, platinum and asbestos, we consider our mineral assets to be a waning resource. We hold that, to a large extent, we shall be compelled to resort to the less productive ores, and often less accessible ones, for our future supplies. When, however, one reads current reports, as they are relayed from out of our last remaining frontier in the North-West—the wilderness of forest, water, muskegs, ice and rock—one begins to wonder if perhaps an El Dorado has not been concealed among our frozen assets. All these reports had probably better be taken with a grain of salt.

That there is wealth in this million or so square miles of northern fastness is an assured circumstance. Its development so far has been very sporadic, marked by rushes and followed by abandonments. The area is reported to be scarred by diggings and shafts that failed to produce, and to be littered with ruined and abandoned equipment. The important minerals, authoritatively reported, have been of four main types: gold and silver; radium and uranium; lead, copper and tungsten; and last, but not least, oil.

The extent and richness of these deposits no one can foretell, except, to some extent, that of the famous Alberta "tar sands". These are said to cover an area of from 10,000 to 25,000 square miles to a depth of 225 feet. They are often referred to as having a reserve supply of 100 billion gallons of oil—probably the largest oil reserve to be found in the world. Under a midsummer sun they have been described as dripping with globules of black oil; but to separate the oil from the fine sand, profitably, has proved a thorny problem. Besides these deposits there are oil wells of long standing in addition to recently drilled ones.

Although the development (if so we may call it) of our "Northwest Front" has been sporadic and vaguely exploratory, a new era is no doubt at hand. In the near future this vast fastness will be covered with a network of roads, now that the region has assumed strategic importance; and now that the door, which has stood ajar for 100 years and more, has been "kicked open by the army boot". As the military curtain lifts, we find a great highway, the Alaska Highway, 1500 miles long (1257 in Canadian territory), penetrating the forbidding expanse from Dawson Creek to Fairbanks, and a pipe-line, the Canol Pipe Line, stretching snake-like across 400 miles of mountain and morass from Norman Wells westward to Whitehorse, almost completed, not to mention the 110-mile pipe-line now in operation between Skagway, Alaska, and Whitehorse, in the Yukon. Besides these accomplishments, there are plans for many more distributing miles of pipe-line, perhaps 1200, in the making. All this reads like an epic, and in its newness and suddenness tends to dim the older but more spectacular accomplishments—those of the conquest of the Rockies by the Canadian Pacific Railway, and the joining of the Atlantic and Pacific Oceans by the Panama Canal.

The area is also destined to become of great strategic value in a non-military sense. As a connecting link, and a very long one at that, between North America and Russia and Eastern Asia, it will play a very important role in postwar aviation—postwar development of great significance in linking up North America with the Old World and with Europe. To the success of this project, the adequate supply of oil, literally at hand, is of no small consequence. Of no small consequence, also, is an adequate supply of the commodity commonly called "interests". These may be variously described and evaluated. At any rate joint investigation of the resources is now under advisement.

Without doubt the "episode" with Japan has turned the faces of

Canadians and Americans northward, and in so doing both have spied wealth and opportunity in the earth and in the air, rivalling anything that has excited joint attention within recent times. By and large, this experience, and the mutual agreements reached in record time, forcibly demonstrate the measure of the claims of emergency—this time the bridging of the Northwest "corridor".

A PRECEDENT IN CO-OPERATIVE CONSERVATION

This brief review and accompanying suggestions have been given in the hope that they may form a background for co-operative effort in the conservation of our combined natural resources. As the Canadian natural resources were touched upon, American readers, no doubt, called theirs to mind in comparison.

As a concrete example of a *faite accompli* in co-operative conservation, the United States-Canadian protection of migratory birds comes to mind.

As a result of the gradually diminishing numbers of the migratory birds, in spite of localized legal protection, it became evident that this patchwork of varying, and at times unharmonious, legislation adopted by the States, Provinces and local areas would not suffice. In lieu of this, and following international discussion and correspondence, the United States and Canada ratified in 1916 an international agreement known as the Migratory Birds Treaty. This was subsequently put into effect in each country by appropriate Federal legislation.

In Canada the administration of the Treaty is carried out by the Dominion Government in co-operation with the Provinces, all of which consented to the Treaty before it was adopted. The Dominion's administration of bird protection is under the jurisdiction of the Department of Mines and Resources with the co-operation of the Royal Canadian Mounted Police. The former maintains a small staff of officers who are specialists in such work. The law is enforced, bird sanctuaries are established and maintained, and educational work is carried on by means of literature, lectures, radio broadcasts and motion pictures.

The Migratory Birds Treaty has now been in force for more than a quarter of a century. It has proved to be an outstanding instrument for the conservation of valuable and attractive birdlife, and has been used as a model in drafting other agreements for similar purposes. It

should also be added that the provisions of the Treaty are flexible enough to provide for minor adjustments annually.

As a result of the Treaty we may justly say that the birdlife of North America is enabled thereby to play its proper role in the scheme of life, and meets human needs much better than it could otherwise have done.

A CHALLENGE TO MUTUAL UNDERSTANDING AND GOODWILL

Without doubt the exigencies of war have brought our two peoples closer together than ever before. The defence of a heritage more dear than material possessions has forced us to re-evaluate our "staked claims" on the North American continent. For a brief period, at least, their value paled in the fierce light of imminent danger, and together we pitted them against a common foe. But what of the future? Can we continue, when the danger is past, to hold this lofty appraisal? I think we can if we refine and purify our concept of sovereign rights. That is, if we can bring them into harmony with the "currents that draw the years"; for example, the growing conviction that possession is not synonymous with monopoly. More and more we are coming to realize that the natural resources, pre-empted by such claims as "ours", must somehow redound to the ultimate good of all, and that we hold them in trust, to be enjoyed, developed and utilized, but not prejudiced by sovereign rights. The harmonious integration of these aspects of possession will tax all that we have learned in this war. The need of this integration will meet our two countries at every turn in the various fields of conservation; in the conservation of the soil and water, that together we may meet our dual postwar responsibilities toward a hungry world; in the products of the forests, that we may equitably distribute their products as primary users, on the one hand, and possessors on the other; in the products of our mines, so indispensable in a mechanized world, particularly one that plans to remain prepared for war; in the development of trade and commerce, the means of which have been abnormally developed during the present emergency; and finally and very definitely, the contemplated development (not exploitation, we hope, as now generally interpreted) of the near-Arctic Circle regions—those that have come into prominence through military urgency. The achievement of all this will be a challenge to our mutual understanding and goodwill. With the exemplary, indeed unique, record of accord behind us, however, we have every reason to view the future with confidence.

INDUSTRIAL NUTRITION

HOWARD L. WALKER

Executive Vice-President, Canadian Food Products Ltd.

NUTRITION has stepped into a new place in the production line. Modern research has revealed that the problems of absenteeism and efficiency in great measure are bound up in the same bundle as the food consumed by the employees. Until recent years managers of industry have been much less impressed by the enormous advances made in the science of nutrition than, for example, by the advance in the science of aviation which has been made during the same period. Yet the findings in the realm of nutrition in the last two decades have been fully as revolutionary as those in that of aviation.

Scientific nutrition had been much longer overdue than the science of aviation, for nutrition has been a vital function in human society for a much longer period than aviation has been practised. The researches of the scientists had been concentrated on the problems of pathology and therapeutics so intently that the true facts of nutritional science remained in obscurity until the first quarter of the present century. And this modern knowledge has not yet been assimilated by the most of our people.

In the domestic sphere many a mother thinks her child, who has consumed a mass of starchy foods, has been well fed, simply because the child has ceased to be hungry! If a dietician scores for nutritional balance the lunch-pail of the average industrial worker he finds many of the most essential food elements lacking. These men and women form a section of humanity who often live perpetually on the border line of illness, in a state of sub-standard health that militates against industrial and commercial efficiency.

Near-illness of employees at work who are below par from the point of view of efficiency has as definite an effect on production as the actual illness which is responsible for absenteeism in industry. Both losses offer a challenge to the exponents of better nutrition: such a challenge has been responsible for the war movement along lines of

modern nutrition. How little the average employee in industry associates his experience of sub-standard health with the food he eats is the result of an ingrained mental attitude; he believes sickness to be the result of an infection or disorder that has no association with food, and which demands medical or surgical treatment.

With the average person, the idea still persists that he is better off with the food he wants just because he desires it . . . just as though a child were better off with the excess of sugar content of candy just because he has a passion for it! How little taste is a guide for true nutritional values was illustrated in the early stages of the war in Britain when the authorities attempted to "pressure" the population into the use of whole meal bread. The food value of this bread over the white bread in general use was incontestable but even influential journals commented in the case of the coal miner that "he labours long hours in the darkness in toil that is essential to his country's welfare and they want to deny him the good white bread he likes."

The average worker has not yet become aware that he digs his way with his teeth into the zone of deficiency diseases. And he has the tendency to regard the ballyhoo about scientific nutrition as so much applesauce. This is because he is not truly aware of the facts. It has been found, for example, that normal people moving into areas where stomach ulcers and duodenal ulcers abound sooner or later contract these disabilities if they live on the food produced in that area and in the dietetic balance characteristic of the country. Diets which are off-balance do set up diseased conditions: the balanced diet is the natural buttress of good health. In the armed forces, scientific control of diet is working wonders. A Leading Aircraftsman of the R.A.F., a Canadian, who has been stationed for over a year in Africa, mentions a trip to the dentist which disclosed the presence of one small cavity. "And this," he adds, "is a good barometer reading of the state of my general health." Balanced nutrition holds great rewards for industry: more working hours per employee per annum, increased efficiency, and the individual sense of security and higher morale in the employees that goes with abundant health—all these prizes are the assets of industry as well as of the worker.

The undertaking for improved nutrition in war industry has had the backing of the Nutrition Services Branch of the Department of Pensions and National Health in Ottawa. Directed by Dr. Pett, this organization has co-operated with the educational programme necessary to influence the eating habits of employees. For example, one menace

in the eating habits of employees, especially female employees in war industry, is the failure to take an adequate breakfast before reporting to work. Dominion Nutrition Services has endeavoured to combat this menace to healthful eating habits by its educational media such as leaflets, pay envelope stuffers and also through its public relations media such as press releases, speeches, community nutrition classes, etc. It has endeavoured to get the co-operation of Canadian industry by the serving of breakfasts in plant canteens and by the provision of a mid-morning rest period when the workers can buy nutritious snacks and beverages.

The introduction of the modern cafeteria into the modern war plant has marked the main effort of war industry to face the challenge of better nutrition. The mid-shift requirement is for a square meal and whether the employee eats, at this point, a light meal or a heavy meal, the suggested menus for both guarantee a sound nutritional balance. The cafeteria as the most effective medium of food distribution to the individual employee has taken its place in the Canadian plants sometimes as a company operated enterprise entirely, and with the co-operation and inspection of the Government nutritional services these units have proved very effective. But food service to employees in the larger war plants is itself in the classification of big business, and in many instances the manufacturers of war supplies, burdened with their own problems of production, have found it advisable to turn over the franchise for their plants to the corporations which specialize in food services. Under central management, a chain of these cafeterias and snack-bars in war plants is to be found operating across the Dominion with quite obvious advantage to industry and to personnel. One great munition corporation, for example, with fifteen thousand employees on the payroll, can be excused for passing the ball of nutrition services to the specialist who combines the organizing capacity for feeding such a huge force with the most modern standards of scientific nutrition.

Reference has been made to the balanced menus that are recommended to the employees' choice. One of the largest industrial food corporations operating in war plants has supplemented such menu displays with the signs of a semi-humorous type that "kid" the customers into drinking milk, etc., and into having the adequate variety of foods on the tray at the cash desk. Hints to the restaurant worker in the kitchens and other working rooms of the cafeteria encourage the observance of the hygienic standards in food handling and processing. This educational programme by display signs has produced excellent

results, even under the cafeteria system where the individual has a large range of choice. Where it has been in operation, the Dominion Nutrition Services has inspected the trays passing off the cafeteria tray line and checked for food balance. This is done by examining the food on each tray for the presence of protein, vegetables and milk—taken as a rough norm of food balance—and the percentage of trays that are adequate under this system of scoring has shown a steady increase in concurrence with the educational programme. Nutritional Services at Ottawa have been conducting inspections of this type to show the weaknesses of nutrition in various plants and have used them as a basis for nutritional crusades in war industry.

The gains in scientific nutrition among industrial workers are the pay-off of a process rather than of a revolution. It is well known how wedded the individual is to his established eating habits. And this persistence in eating habits based on ignorance of sound nutrition is not confined to the wage-earner. Salaried groups with a better educational equipment seem to be just as "set in their ways" in this regard. Even a man who was nurtured in the official circles of good living frequented by the late Walter Hines Page, United States Ambassador to the Court of St. James, after many years' residence in Great Britain, sadly admitted that "the English liked and used only two vegetables and that cabbage was both of them!" The dietician in charge of the average war plant does not look for the immediate creation of a new nutritional heaven; she is satisfied with results in which "gradualness is of the essence".

The cafeteria system has been in one war plant for three years. Scoring for nutritional balance has been going on for the full period and the improvement during this time has been phenomenal, according to the food services officers who have had this group under observation. Credit for this on the part of the professional dieticians in attendance is freely shared with the Nutrition Services of the Dominion Department of Pensions and Health, the newspapers, the magazines and periodicals with columns and pages devoted to modern nutrition, the co-operation of food companies in their advertising programmes, the radio and all other publicity agencies which have an educational influence. Improved diet for the Canadian public really has been a national enterprise—it has been one of our most dynamic special efforts during the last four years.

The system that has gained popularity with wartime industry has been that of entering into a contract with a professional caterer or food

service corporation on the basis of providing the restaurant equipment and turning the food plant over for operation. Official co-operation from Ottawa has been evident in granting the same priority in the buying of such equipment as is held by the war plant making the purchase. The specifications provided by the food service corporation are observed, then the specialist moves in, staffs and operates the new food plant. The problem of suitable staff has been a wartime headache but National Selective Service has provided valuable assistance to industrial food services in making experienced help available for key positions. Professional handling of these food distribution centres with qualified dieticians in charge is an excellent guarantee that untrained help will speedily become trained along the right lines. The present situation in regard to staff was recently commented upon by an officer in charge of a foods service personnel department:

"If these were normal times we would say our staff problems were very great. But today we cannot say that. We get plenty of people, but not always completely experienced or competent."

The value of sound knowledge based on experience cannot be over-estimated. To a great extent, price control is bound up with buying power, and buying power determines directly both the quality and quantity of food that is served with an order that costs the consumer twenty-five, thirty and thirty-five cents. This deserves special attention because one of the chief obstacles to balanced nutrition is the economic one. Buying power that produces maximum value for the money is therefore an element that can promote the success of a programme of more balanced diet. A summary of food quantities of thirty of the war plants in Eastern Canada brings to light the following, per week:

Tea	1,600	pounds
Coffee	1,800	pounds
Butter	5,500	pounds
Meat	24,000	pounds
Milk in bulk	2,450	gallons
Vegetables	500	bushels
Potatoes	360	bags
Juices	2,000	gallons
Full meals	132,000	
Light meals	134,000	

To purchase supplies on this scale is a job for experts. Only men at home in the realm of a commodity as seasonal and as perishable as food would know the ins and outs of when, how, where and how much

to buy. An industrial food service corporation operating on a small charge in relation to sales, with a policy of economical purchasing on this grand scale, efficiency in handling, and precision buying as to quantity, can substantially eliminate waste. Where meals at low cost have to satisfy industrial workers as to quality and quantity, wastage would be fatal to the survival of a low-cost plan; it would either raise the price of the meals to a higher price bracket or diminish the quantity and quality of the fixed-price meal. It is evident that there are excellent checks on the corporations operating war industry cafeterias on the basis of the value given the worker in meals at twenty-five, thirty and thirty-five cents.

When Lord Woolton assumed the post of Food Minister, he stated: "I am not here to satisfy the tastes of the people. It is their needs I must meet."

This statement reveals the wartime necessities that have invaded nutrition throughout the world, in Canada possibly to a smaller extent than most places. The real conflict between taste and need is at the heart of defective nutrition. Food scarcities that have been common in wartime have been the means of watering down taste antagonisms.

In Britain the astounding fact that has emerged during the war is that the change in food habits made imperative by scarcity has forced upon the masses of the people a far more healthful diet than was the case when there was unlimited exercise of individual choice. It is fashionable to refer to the people as "fighting fit". This is of special interest to the advocates of nutritional control. A United States labour delegation, recently returned from visiting the workers in British war plants, have expressed admiration at the high efficiency of the average worker, at the way he stands up under the sustained pressure of war production. The food controls of the British Isles with the enormous increase of locally produced fresh vegetables has raised the efficiency and fitness of the workers to an amazing degree. Food luxuries have ceased to exist; the peculiarities of off-balance diet have diminished; and regulated diet, even if monotonous, has proved more beneficent. Another highly informative chapter has been written in the book of modern industrial nutrition.

The planning of food supply has commenced on a world-wide scale. The dietician in industry is facing the task of maintaining balanced nutrition within the limits imposed by necessity. Directives have been coming out seasonally from Nutrition Services in our Department of Health, calling attention to the current seasonal sources in foods for

the vitamins; these bulletins contain instructions in the preparation of foods designed to preserve their vital values. Skillful planning is the answer to the operation of food services within the restricted limits imposed by world co-ordination of supply. Adjustment to the world food situation was the text of the statement of President Roosevelt last November.

"I am confident that the civilian population of the United States is ready to give up certain eating habits and accept certain shortages. . . . They know that they must if the war is to be won. A sharp line will have to be drawn between the luxuries of life and the necessities of life. A shortage in sirloin steaks or in the choice of fruits does not mean that the war food programme has failed."

"In view of the fact that more food is wanted than actually exists, it is necessary to have regulations and rationing that are sometimes very burdensome. But they are the only way to insure that everybody gets a fair share irrespective of his economic or social or political standing."

Whatever scarcity develops, scientific nutrition will see to it that no compromise is made in the campaign of education for better eating habits of the workers. The march of war industry to the goal of better health and fitness can be maintained with even fewer food varieties than are available at present. The aid of science, mediated through competent nutritional staffs, will provide the necessary guidance for industrial nutrition.

Pasteur, the great pre-nutrition scientist, defined the law of humanity as "the law of peace, work and health, whose aim is to deliver man from the calamities that beset him". And he adds a word for science, operating in harmony with the law of humanity:

"Science, in obeying the law of humanity, will always labour to enlarge the frontiers of life."

Modern industrial nutrition is on the march to the new frontiers of life.

INDUSTRIAL FIRE INSPECTIONS

J. S. KENNEDY

*Engineer, Associated Factory Mutual Fire Insurance
Company*

IN spite of the magnificent effort made by most industries to control fire losses, industrial fires in Ontario alone, since the outbreak of war, have destroyed manufacturing facilities equivalent to seven complete industrial plants valued at over a million dollars each. This is simply the material damage and does not include the loss in production of essential war material and civilian goods. Neither does it include the waste of manpower or the thousands of man-hours needed to produce the materials destroyed. Many more man-hours were lost because of lay-offs resulting from the shut-down of production facilities. That most of these losses were preventable provides a tragic backdrop to the picture. It shows that many of us have not benefitted by the lessons learned from thousands of similar fires in the past.

Fire prevention engineers carry out regular inspections of many industrial properties at intervals of from three to four months, working with industry as advisors and consultants in the analysis and safeguarding of hazards. The reduction in losses which can be realized from this work depends wholly upon the consideration which management gives to their recommendations. Although most major industries are adequately serviced, there are still many properties which do not benefit from such inspections.

Business is administered primarily to make reasonable profits from basic manufacturing operations. To realize this objective, it is essential that all reasonable precautions be taken against unnecessary loss. Consequently, the work of loss prevention is of particular interest to the officers charged with the administration of any organization. The experienced insurance manager knows also that expenditures made for proper fire protective equipment will, in many instances, lead to substantial reductions in insurance costs. This is the natural result of the decrease in the probable maximum loss from fire and allied causes.

DEVELOPMENT OF FIRE PROTECTION

The value of the work done by technical men in the fire prevention field is not common knowledge. The accompanying chart, based on



A hundred hose streams were available at this unsprinklered warehouse after the fire got under way. A few automatic sprinklers would have extinguished the fire at the start.



actual fire losses in a large representative group of industries, amply demonstrates the benefits derived from inspections by experienced personnel and from the installation of adequate fire protective equipment.

Prior to 1835, little interest was taken in the application of engineering principles and experience to the science of loss prevention. Disastrous fire losses brought the problem to the attention of a group of progressive mill owners who, realizing that the normal growth of industry would be drastically curtailed unless some means could be found of preventing such mishaps, started a study of the cause and control of fire. Thorough investigations of each recorded fire led to the elimination or segregation of many hazards. Processes in which fires were likely to occur frequently were relocated in small detached buildings. Many weaknesses in construction were discovered, and quick burning types were eliminated as far as possible. Floor openings were enclosed to prevent the rapid spread of fire in multi-story buildings. Improved maintenance of machinery reduced the frequency of friction fires. Proper disposal of rubbish and waste minimized possibility of fires due to spontaneous heating. Employees were trained to fight fires with all existing facilities. The chart shows that, by application of these and similar common sense remedies, the fire loss in this group of mills between 1835 and 1850 was reduced from 63c to 37c per \$100.

Loss experience demonstrated, however, that even the best house-keeping and maintenance could not prevent occasional fires; also that there was a potential total loss in each fire which occurred. It became obvious that some automatic apparatus was required to detect and to extinguish fires before they gained headway. An excellent example of loss experience is found in the record of a Vermont knitting mill which was established in 1824. The mill was destroyed by fire in 1836 and nine idle years passed before it was rebuilt in 1845. Fire struck again in 1883, completely destroying the mill. It was rebuilt a second time in 1885 and automatic sprinklers were installed. A number of fires have broken out since, but all were controlled with small loss by a few sprinklers. That mill still operates to-day.

The development of the automatic sprinkler started with perforated water pipes in 1852 and the first truly automatic sprinkler came into use in 1875. By 1910, the mills in this group, learning from experience, had extended their sprinkler systems to all important plant buildings. Water supplies, both public and private, had been vastly improved, and hydraulic engineers were able to estimate accurately the probable

demand on any fire protective system and to plan supplies accordingly. This was an important development, since experience had shown that a sprinkler system could not be expected to control a serious fire without an adequate water supply, good for several hours duration. As protection and construction were gradually improved, the loss ratio was further reduced and is currently less than 3c per \$100 in this particular group of properties.

The remarkable effectiveness of the automatic sprinkler is indicated by the fire loss record of this group: Over a recent 15-year period, only \$600 average fire damage occurred with sprinkler protection, whereas average loss in unsprinklered areas amounted to \$7,500. It is not surprising, in view of this record, that fire prevention engineers are enthusiastic advocates of complete sprinkler protection. The economies involved are such that the cost of installing sprinkler protection in most plants can now be written off in a few years due to reduction in insurance premiums.

PRESENT-DAY FIRE PROTECTION

As industry expanded and new processes were developed, many new hazards were introduced. Notable is the extensive and rapidly increasing use of flammable liquids in manufacturing processes. The use of liquid, gaseous and pulverized fuels has introduced fire and explosion hazards which, if not properly safeguarded, may cause serious loss of life and property. Hazardous materials, such as magnesium, which were practically unknown in the nineteenth century, are now in common use. Serious fires are unusual, however, because the processes are generally protected by adequate safeguards.

Laboratories now operate in conjunction with large fire insurance organizations for the testing and development of reliable and economical protective equipment. Their representatives visit the plants of their assured regularly, to supervise the fire protective equipment and to make a thorough survey of the fire and explosion hazards. Economical and practical protection for almost any hazard can be worked out by the plant engineering department with the assistance of these engineers. Unusual circumstances occasionally require that the problem be submitted to the laboratories or to special engineers for analysis. While visiting the plants, the engineer may truly be regarded as an employee of the assured, for he is working in their interests. When an unprotected hazard is encountered, the recommended precautions are based on practical loss experience and on sound engineering fundamentals. The reliability of any recommended protective equipment has been

proven both by exhaustive laboratory tests and by adequate field experience.

Protect the Danger Spots

There is a lesson in the experience of a New Jersey plant in connection with a new drying oven which they installed recently. A fire prevention engineer, during a regular inspection, noted certain deficiencies in ventilation and safety devices and ventured the prediction that "it might blow up any minute." A complete set of safeguards was outlined, but the equipment continued in service without alteration and three days later, true to the prediction, an explosion demolished the oven. This is an excellent example of the importance of consulting loss prevention engineers before putting hazardous processes into operation.

Much thought and care has been given to make these ovens and dryers safe, with such success that explosions are rare indeed. A New England textile mill, realizing the hazard, had the foresight to check conditions carefully when war production forced changes in their manufacturing processes. Part of the cloth production was recently converted to making a special fabric finish for the Army. One stage of the original process had been to run wet cloth through a dryer—a process with no explosion hazard, and only ordinary fire hazard. Now, however, the cloth is coated with a highly flammable solution which, when the solvent is evaporated, makes it proof against rain, flame and mildew. Putting this cloth through the dryer introduced serious hazards and the management asked engineers to check conditions after the changeover. The oven atmosphere was tested with a flammable vapor indicator which showed that it was within the explosive range—all ready to release its destructiveness as soon as any accidental source of ignition was applied. Immediate remedies were adopted so that the atmosphere was kept well below the lower explosive limit. Thus safety has been assured and the Army, which had been asking for increased output, did not have to be told that deliveries could not be made because "a dryer exploded".

Improve Substandard Protection

Incidents following a recent survey of fire protection requirements in a tenanted New York State mill form another excellent and typical example of work done to prevent unnecessary loss. The engineers recommended that the existing weak water supply be improved by the installation of 900 ft. of 8 inch city water main. The work was financed by the tenant after the city and building owner were approached without success. The new main increased the supply from 560 gallons per

minute at 30 lbs. pressure to 800 gallons per minute at 47 lbs. pressure. Within three months after the job was completed, fire broke out in a one-story brick warehouse containing baled cotton and wool waste, cotton piece goods, cotton yarn and paper cartons piled about four bales high and from wall to wall. Due to high piling, many sprinklers operated. In addition, two large hose streams were used. A common error of the human element occurred. In an unwise attempt to prevent water damage, the sprinklers were shut off before the fire was under control. More sprinklers undoubtedly fused before the system was turned back on, and a total of 44 heads operated. Had these sprinklers, plus the two hose streams, been dependent on the former weak water supply, it is likely that the building would have been lost. The total damage was confined to a relatively small figure.

Delay Invites Loss

Prompt action on inspector's important recommendations is always advisable. Early in 1942 an inspector at a Central Ontario mill discovered that some hazardous electrical switching equipment had been moved from a safe location and placed inside a fibre storehouse for convenience in using an electrical hoist. The management, on being informed of the hazard, arranged to have the equipment removed as soon as an electrician was available. Unfortunately a shipment of baled fibre had to be moved during the intervening period, and members of the Shipping Department, who were unaware of the hazard, used the equipment. Sparks which were generated ignited nearby fibre and the resulting fire damaged thousands of dollars worth of fibre which could not be replaced since the Japanese had inconsiderately cut off the source of supply. Salvage procedure in the event of such loss had been carefully considered years before the loss occurred. Prompt and efficient salvage work fortunately saved most of the water-damaged stock. Salvage brigades are advisable in most large plants, and are frequently recommended by fire prevention engineers. Loss experience has shown that salvage must be started as soon as possible, either during or after the fire, and the engineers can advise regarding the most effective methods.

Although the regular inspectors from the fire insurance company may visit a plant every three or four months, it must be realized that they are working in an advisory capacity. Daily vigilance on the part of the plant fire chief and members of his brigade, who are thoroughly familiar with the plant, will often reveal possible fire hazards which crop up between regular inspections. Thorough weekly inspections of all fire protective equipment are made in most industrial plants. During

DEVELOPMENT OF FIRE PROTECTION 1835 to DATE	LOSSES Cents per \$100 Insured 10-yr. Averages	COST Cents per \$100 Insured 10-yr. Averages
1835 - 1852 Water pails and casks Standpipes with hose fed by small tanks and pumps Care Good watch service	63c	84c
1852 - 1875 First perforated pipe sprinklers — 1852 Perforated pipe sprinklers being provided generally in cotton picker rooms and some other departments	37c	39c
	33c	31c
	30c	35c
1875 - 1895 FIRST AUTOMATIC SPRINKLERS — 1875 AUTOMATIC SPRINKLERS replacing perforated pipe sprinklers and being extended to all parts of factories and storehouses as experience showed their value	17c	23c
1895 - 1910 AUTOMATIC SPRINKLER PROTECTION rapidly nearing 100% for all parts of manufacturing plants	12c	16c
1910 to DATE AUTOMATIC SPRINKLER PROTECTION generally complete Water supplies being strengthened Construction improving as new replaces old Percentage of concrete and other non-combustible construction increasing constantly	7c	11c
	5c	6c
	4c	6c
	3c	4c

these tours, the plant fire inspector should carefully check on all operations and confer with departmental heads regarding possible hazards due to new or revised production methods.

Approved Equipment Recommended

New operations involving the extensive use of flammable liquids or gases should be reviewed by the insurance company before such operations are started. Preliminary plans should be submitted for approval if possible. A visit by a qualified engineer can, if necessary, be arranged at short notice, so that adequate safeguards may be provided before operations are started. As an example, a recent request for advice on the protection of a proposed new 8,000 gallon oil quench tank resulted in the installation of an approved system of fixed water spray nozzles. Four months later a hot casting dropped accidentally and broke a one-inch oil pipe, causing an oil spray which was ignited upon striking the casting. The water spray went into action promptly and automatically, quickly snuffing out the fire before it could spread to the large tank oil surface. The only damage was the broken pipe!

Maintain Protective Equipment

The maintenance of fire protective equipment is of vital importance. A New England mill recently suffered serious loss of property because of a broken valve controlling the sprinkler system in a large building which was completely destroyed by fire. During operation a few weeks before the fire, the valve stem was broken in such a way that the valve appeared to be open although it was tightly closed. A simple drain test would have shown that there was no water in the system, but this was unfortunately overlooked. In addition to drain tests, which are made by the engineers during regular inspections to ascertain that individual systems are in order, full flow tests from yard hydrants are made annually to check on the condition of the water supply from public mains, gravity tanks or fire pumps. These often disclose serious deficiencies before trouble develops. Special investigations are occasionally made to examine the interior of sprinkler piping for possible obstructions. During the last year, obstructions found by inspectors in yard and sprinkler systems of several well known Ontario mills were of such a nature that large portions of the protective systems would have been practically useless in case of fire. These obstructions have since been cleared by a simple flushing procedure and precautions to be taken in future will largely eliminate possibility of further obstructions.

WARTIME CONDITIONS MAGNIFY PROBLEMS

In the spotlight today is the plant engaged in production directly concerning the war effort. Loss of production or of the precious finished product may result in the needless sacrifice of lives of our fighting men and lengthen the duration of hostilities. Rush production which prevails in these plants increases fire hazards. Maintenance frequently gets less attention. Any laxity in oiling schedules mean more hot bearings. Old electrical equipment may be overloaded. Temporary electrical wiring is much more prevalent; about 20% of recorded fires result from electrical causes. New processes may be put into operation before adequate safeguards are provided or with makeshift, hurried safeguards.

Employment of new untrained men and women, unfamiliar with hazards, increases the possibility of fire through human failures. One-fourth of industry's fires start as a result of everyday carelessness or ignorance. Another fourth are due to poor maintenance of equipment. The war production plant must guard against increase in these types of fires which show the importance of instructing plant employees in the hazards of their work, and planning safeguards with the help of competent loss prevention engineers.

The Department of Munitions and Supply, realizing the importance of this loss prevention work, arranged at the start of the war to have regular inspections made of all important war plants by field representatives of the various underwriting groups throughout Canada. The excellent fire record of these plants shows that this precaution has been well worth while.

During the past few years, and in some measures still, the "non-essential" plant has been plagued by fear that it may not be able to continue in production to the same extent as in the past. Procurement of labour has become increasingly difficult and many of the new employees are poorly equipped for their jobs. Shortage of raw materials and of many types of essential equipment combined with low priority ratings have made it difficult to obtain needed supplies and replacements. Many of these plants will assume great importance in the immediate postwar period, but if serious loss is suffered, replacement of structures and equipment may be delayed for many months because of the greater current importance of the "war" plants. This may seriously affect the operation and development of a plant which may be most "essential" shortly after the end of the war. Many instances have recently come to light where "non-essential" plants have found it necessary to use hazardous materials for normally non-hazardous production

because of the "freezing" of some of the commonly used chemicals such as carbon tetrachloride. Such substitutions may result in crippling fires or explosions if the processes are not equipped with adequate safeguards.

Most industries and businesses today are faced with difficult problems of production and operation regardless of their "essentiality", but these problems will be greatly magnified if fire or explosion wipes out an important part of a plant or completely "corks up" an important bottleneck. Management can help prevent such occurrences by co-operating with the engineers whose knowledge and training enables them to anticipate and to advise proper protection against the lurking disaster. These men are constantly working with this problem of industrial fire safety and their experience reaches out in all its details into all types of plants. Their only interest is to give just the advice which will be most helpful in enabling management to make their operations safe from fire.

CANADA'S BUSINESS PRESS

RALPH W. MAGEE

*Manager of Public Relations, The Maclean Publishing
Company, Limited*

SOME months ago a committee of major Canadian industrialists met to put into final form a master plan which would control the distribution in peacetime of enormous surpluses of war materials. As well as each member of the group, sub-committees of experts had been working out the details for months. Now, at long last, everything was in readiness for a momentous decision.

But this was not to be.

For, almost as soon as the plan was unfolded, awkward spots became apparent. Furthermore, there did not seem to be any way of ironing them out.

"It's no use, gentlemen," said the chairman, "this thing won't work in its present form. And it's my opinion that we are so close to the forest that we can't see it for trees. We have got to have some independent viewpoint on this."

Aware of the economic explosion which would result if vast quantities of war materials were to be dumped on the market indiscriminately, these industrialists saw that they required the advice of men who knew every problem, every facet, of Canadian marketing.

So they turned to a group of Canadian business newspaper editors and invited them to sit in on the planning. They invited the editors because, over the years, they and hundreds of other business leaders, had consulted them and learned to value the business editors' broad field of knowledge and a specialized training. In short, they knew the editors to be men whose job it was to be on top of every situation, every reaction in every field they reached.

Early last December, this consultation between business men and business paper editors took a new and important turn when a dozen of Canada's top-flight executives sat down with some 75 editors and publishers of business newspapers from all over the nation and, in an all-day, off-the-record discussion of topics which heretofore had been

dealt with only in the inner sanctums of board rooms, talked openly of the problems and prospects facing their companies today and in the postwar period.

The importance of the event was two-fold. It was the opening conference of a series which will carry on throughout 1944. And the statements and revelations of the executives became vital basic background for a group of editors who were writing for the information and education of some 2,000,000 extremely important Canadians.

Not only are business men taking increased interest in this lusty and growing giant of the press but so is the Government. A year ago, for instance, virtually the entire officialdom of the National War Finance Committee, headed by Finance Minister J. L. Ilsley and Chairman George W. Spinney, came to Toronto for a private meeting with the business paper and periodical editors of the nation. Again, just recently, these same editors and publishers held two days of private conferences in Toronto with the whole head office officialdom of the Wartime Prices and Trade Board, including Chairman Donald Gordon and the heads of each major administration, and with Mr. Ilsley and War Finance Committee Chairman Graham Towers and all their leading associates.

One does not have to search far to find the reason for this interest in and dependence on the business press of Canada. For the record of the business publications has been one of increasing service and influence. They have worked ceaselessly through the years for a more efficient, a more prosperous free enterprise in Canada. They have established themselves as veritable bibles in their various spheres in both peace and in war and have built up an audience of more than two million regular readers.

Canada's trade press, as we know it now, started when John Bayne Maclean produced Canadian Grocer in 1887.

Known as "The father of the business press in Canada," Colonel Maclean, who was then market editor on the old Toronto Mail, was actuated by two motives. The first was the necessity he saw for a Canadian business and industrial press devoted exclusively to the needs of rapidly growing Canadian business. There were, he saw, trade and business publications issued in other countries, but they were not tuned to and did not know the Canadian angle. He knew that only Canadian papers could give the service required. Again, he found that it was impossible to get sufficient space in the Toronto Mail to give adequate

coverage to Canadian trade problems, and when the sporting page decided to expand and encroach upon his market columns, he knew it was time to act.

He acted by resigning and, with his own savings, launching a little paper known as "The Canadian Grocer."

Although the Grocer was not without its moments of intense anxiety, it was an immediate success. This is best demonstrated by the fact that in 1888 Col. Maclean established Hardware and Metal, his second trade paper. It, too, was a success and within two years had been joined by two more Maclean papers—Bookseller and Stationer, and Dry Goods Review.

Such were the beginnings of what has come to be the largest periodical publishing house in the Dominion, The Maclean Publishing Company Limited of Toronto, which, while nationally known for its magazines and The Financial Post, still ranks as number one publisher in Canada of business, industrial, technical and management papers. It now has a roster of 21 such periodicals, headed by the four first established Maclean papers.

In the less than sixty years since it was established, Canada's trade press has gone a long way. There are now a total of 240 business and industrial papers with a total circulation of upwards of 725,600, and 20 finance and management papers with a combined circulation of 96,900-odd. And surveys show that each of these papers is read by an average of three leading business men, retailers, merchants, managers, superintendents and foremen.

Some idea of the growth of the business press is shown by the rise of membership in the Business Newspapers Association of Canada since its inception in November, 1919. At that time it was an out-growth of the Business Paper Section of the old Canadian Press Association Inc., and its total membership was about 30 publications. Today, with the association affiliated with the Periodical Press Association of Canada, its membership is 87.

Aimed at lifting trade publishing out of the "glue pot and scissors" category which for many years stigmatized some parts of it, the association is a vehicle for the general raising of trade publishing standards, ethics and usefulness. Its membership today consists of those publications which have exemplified or lived up to these ideals.

One frequently hears that Canada and Canadians at large suffer from an inferiority complex. This manifests itself in various ways,

one of the most usual being an automatic assumption that certain general fields of endeavour are dominated by products of the United States. It is perhaps because the Canadian public at large does not come into close contact with Canada's trade and industrial publications that there is some inclination to take it for granted that for business reading Canadians must rely upon United States papers. This, however, is very far from the truth. Canadian business papers cover their respective fields very fully, and comparable United States papers are read here, if at all, as supplementary to the Canadian ones which are especially edited for Canadian readers. While there are no accurate figures available, it has been definitely established that the circulation of American business newspapers in Canada is but a fraction of the Canadian paper circulation here.

A good illustration of how thoroughly the Canadian publishing industry blankets the Dominion's business establishments with worthwhile educational papers lies in the fact that this country now has six leading publishers, supplemented by scores of smaller houses, producing the business journals of the nation.

An instance of how well these papers are edited is found in the fact that when, some years ago, the Associated Business Newspapers of America—a U. S. organization—conducted an international contest among several hundred member publications for the most effective editorial work done that year, the All-American Awards Jury gave the \$500 first prize to Herbert L. Southall, of Toronto, editor of a Canadian trade paper. Presentation of the award was made at a special convocation of the Harvard School of Business Administration, Harvard University.

Because the bulk of Canada's manufacturing is centred in the East, it is natural that the East should also be the headquarters for the business newspaper publishing industry. However, this is not to say that Western Canada is not in the publishing picture. Symptomatic of the growth of business and industry in the West is the rise of the Home Publishing Company Limited of Winnipeg to fifth place in the list of Canada's biggest business newspaper publishers. The six leaders, in order of size, are: The Maclean Publishing Company Limited, Toronto; National Business Publications, Gardenvale, Quebec; Hugh C. MacLean Publications, Toronto; Consolidated Press Limited, Toronto; Home Publishing Company Limited, Winnipeg; and Monetary Times Printing Company, Toronto.

When one not accustomed to reading or seeing these publications

hears of business newspapers, he usually thinks in terms of a newspaper of the daily variety. As a matter of fact, they are nothing whatever alike. A daily newspaper is printed mostly in black and white on newsprint paper. It features big headlines, eight columns of type per page, and a generalized treatment of the news, except in local affairs.

The business newspaper looks like a magazine and is produced on magazine lines. Published on fine paper, its pages may carry four or five different colours in each issue. Its size may vary from sixteen pages to more than 600. Its reading matter is all specialized. Its editor is usually an expert in his field who sees that his paper gives intensive coverage which is understandable, informative, educational and helpful to the business man, the merchant, the clerk, the industrialist, the designer, the foreman, or the artisan in a factory. Similarly, in business newspapers, the advertising is of a different nature than you find in the daily press. For instance, in a trade paper the advertising talks to the merchant, not to the customer. In an industrial paper, the advertising deals with the technicalities of machinery or boilers or of conservation of sources of supply which would be of no interest or use to the public generally.

It is in these very differences from the daily press that the fundamental functions of the business press lie.

The business press takes the directing force of the printed page and organizes the experience of business into facts and principles which teach the reader not only facts but facts and principles. It employs and passes along the benefits of research, which is, in fact, the organization of knowledge from a mass of material. From this it moves into teaching.

There, in a nutshell, is the essential function of the business press. It must teach. So true is this that it is now axiomatic that wealth moves with education—and that the modern business newspaper is a continuing course in adult education.

To put it in a more involved form, here is how Dr. Hollis Godfrey, President of the Engineering-Economics Foundation of Boston, sums it up:

"... The key of the entire problem of the relation of education and wealth lies in the fact that the use of the printed page with its record of the principles which govern useful (as opposed to waste) action gives men an opportunity of having more use and less waste

in their action and, therefore, more useful and less waste wealth. From that comes growth in wealth."

The wealth of the field served by the business newspapers in Canada is colossal. Take the retail field, for example. Some conception of this is gained from the fact that in 1941—the last year for which figures are available—the volume of business in Canada's restaurant, drug, hardware, women's wear, men's wear, general stores, grocery and foods, plumbing, book and stationery business, was more than \$1,341,000,000. And in 1941 the sales at factory of industrial products such as abrasives, aircraft, automobiles, parts, boat building, boilers, munitions, castings and forgings, fabrics, electrical apparatus, farm implements, iron and steel products, lithographing and printing, machinery, railway rolling stock, shipbuilding and repairs, white metal alloys, wire and wire goods, and a host of other materials totalled more than \$2,587,000,000.

There are some 400,000 key business men involved in the doing of this enormous amount of business. Those key men are the primary audience, or one might even call them students, of Canadian business newspapers. To increase the efficiency of business men, 5% or 10% is, in the aggregate, a tremendous accomplishment. But there is ample evidence to show that business newspapers have done that. And when one considers that each step forward in efficiency is a step forward in the total of national wealth, the actual cash value of the business newspaper press to Canada becomes very considerable.

But it is in more fields than that of efficiency that the business press has made its mark. It is forever a watch dog against bad practices and monopolistic tendencies. For instance, not many years ago, one business newspaper exposed the famous A.B.C. Plumbing Combine, which started an investigation and prosecution, which led to convictions and fines which totalled more than \$80,000.

In another case, it was a trade newspaper which brought to Canada and developed the familiar "clean up and paint up" campaign which for more than 25 years now has spread across springtime Canada from coast to coast. That single idea has had a tremendous stimulation on the painting and decorating and repair and maintenance businesses during seasons which before the campaign had been slack.

When war comes, business newspapers are virtually put into uniform. In the Great War, when manufacturers received urgent calls for munitions, one Canadian industrial paper started publication of articles

on methods of making shells, cartridge cases and fuses and continued to develop and publish them until the armistice. Not only were these of untold help to Canadian manufacturers, but they were widely copied and used as patterns in many allied countries.

Today and ever since the start of this war, that same paper has been doing the same job over again—and a great deal more because of the new ordnance produced here. In addition to other empire governments, the governments of both the United States and Soviet Russia have relied upon it as a source of vital information for improved techniques in war production.

The same story is true in many other Canadian business paper fields, notably in aviation and shipbuilding.

Similarly, in war finance, the business newspapers of this nation have lent Victory Loan and War Savings campaigns tremendous strength.

In the Fifth Victory Loan, Canadian business newspapers devoted a total of 555½ columns, each 21 inches long, to publicizing the campaign. This is an increase of more than 64 columns over the 491½ columns they devoted to the Fourth Victory Loan.

The effect of this recently moved Graham Towers, Chairman of the National War Finance Committee and Governor of the Bank of Canada, to declare that the people of the nation—the factory and office workers as well as the farmers and day labourers—now had a far greater knowledge of finance and economics and a deeper appreciation of the utter necessity of wartime economies than they had ever had before.

Dealing as they do with some fields which have huge overall dimensions, one might reasonably expect business newspapers to be responsible for raising considerable sums of war money through their publicity. But perhaps the best idea of their potency in this respect is given by the recent performance of a trade newspaper in a relatively small field. The whole thing began when the greeting card industry went to Finance Minister Ilsley and asked him to endorse its idea to put on a greeting card war saving stamp drive in November and December of 1943. Receiving his blessing, the greeting card men turned to the trade papers covering the book and stationery business of Canada and asked for publicity. They said they wanted to raise \$1,000,000.

The principal burden of the drive was borne by two trade papers,

one of which made about 90% of the effort. It even conceived and produced a special tabloid paper to aid the cause.

When the campaign was over, in exactly two months, Mr. Ilsley was surprised to find that it had raised not only \$1,000,000, but an extra \$88,238.

Such is a small glimpse of the work and influence of Canada's business press in wartime.

The series of meetings which business paper editors will have throughout this year with the nation's No. 1 business men, merchants, technicians, points the way to how these papers intend to tackle the problems of peace. They are planning to meet them by adhering to one of the fundamentals of business paper publishing laid down by Col. Maclean when he founded the industry. That principle was that business papers must give more than the current news. They must give also the news of the future. They must know from absolutely reliable sources the plans and the problems, the fears and the hopes of every leader and of every little man in their fields.

The editors' 1944 conference will provide them with that basic information. And armed with it, they will be in a strong position to tackle the greatest problem that Canadian business has ever known—the postwar.





People Must Be Told

The spread of useful information through a daily Advertising policy is part and parcel of the Service rendered to a community by a Department Store.

Without quite intending it, as constant users of newspaper space, we have involved ourselves in an educational as well as a selling job.

We tell people about new products, and new uses for old ones. We tell them how to use and care for the things they buy. We tell them what is a fair price to pay. And the results are beneficial to all.

Something of the responsibility that large-scale Advertising would entail was foreseen years ago; and it was laid down as part of our settled policy: "Truthfulness in Advertising. No exaggerations. And no comparative prices."

Smallman & Ingram

LIMITED

LONDON, CANADA

THE QUARTERLY REVIEW OF COMMERCE

Experience Counts!

THE reason for the London Life's success is to be found in the fact that the Company's guiding principles have been developed through the rich experience gained in the past sixty-nine years.

The London Life
Insurance Company

Head Office: London, Canada

APPEAL TO SUBSCRIBERS:

VOLUMES I. (No's. 1 and 2) and VII. (No. 1)
are required to complete the files of the "Quarterly".

*Will you let us know if you are willing
to part with them?*



THE QUARTERLY REVIEW OF COMMERCE

THE STANDARD LIFE ASSURANCE COMPANY

The Standard Life was the first Life Insurance Company in Canada, commencing business in 1833. It has always concentrated on strength and solidity rather than expansion. The Company was issuing policies on the lives of London citizens as far back as 1846.

Local Office - 365 Richmond St., London

J. H. GOODMAN, Branch Manager

"BACK THE ATTACK"

Your country needs all the help you can give—
with your money, with war work, with your voice and
influence.

When your car needs gasoline or
lubrication service drive in at the sign
of the Maple Leaf.



SUPERTEST
PETROLEUM CORPORATION LIMITED
"Canada's All Canadian Company"

THE QUARTERLY REVIEW OF COMMERCE

our *Fighting* WORKERS Give Wings To Victory



Workers and management, heroically speeding up the number of bombers, fighters and pursuit planes, are playing their part in the battle of production to bring victory. May the flow of war machines keep ever mounting until the United Nations have achieved victory. Through hundreds of branches across Canada the Bank of Montreal is co-operating with war-time workers and industries.

BANK OF MONTREAL

"A Bank Where Small Accounts Are Welcome"

O. Roy Moore
& Co.



REGISTERED
ARCHITECTS



London

Ontario

260 Dundas Street

THE
PREMIER TRUST
COMPANY

* * * *

All the Facilities of
a Well Organized
Trust Company

* * * *

Offices:
TORONTO
LONDON ST. CATHARINES

THE QUARTERLY REVIEW OF COMMERCE

PROFESSIONAL DIRECTORY

J. A. NELLES & SON

Insurance Brokers

Royal Bank Bldg. Richmond St.

Metcalf 343

LONDON

E. H. NELLES H. A. SMITH

JEFFERY & JEFFERY Barristers, Solicitors, Etc.

7 MARKET LANE

London Canada

GEORGE S. JEWELL

Chartered Accountant

512 Huron & Erie Building

London, Ontario

MOORE - SMYTH - WILLIS Limited

GENERAL INSURANCE

260 Dundas St. Met. 5664

VICTOR JACKSON GENERAL INSURANCE

476 Richmond Street

MET. 3066 LONDON

G. M. GUNN & SON

George C. Gunn P. A. DuMoulin

R. A. Fisher

GENERAL INSURANCE

4 & 5 Alma Block, 361 1/2 Richmond St.
LONDON ONTARIO

Carrothers & McMillan

Successors to

Macpherson, Perrin & Carrothers
Barristers, Solicitors, Etc.

C. C. Carrothers, B.A., LL.B. J. F. McMillan, B.A.
BANK OF TORONTO BUILDING
404 TALBOT ST. LONDON, CANADA

HAY STATIONERY CO., Ltd.

331 RICHMOND ST.

LONDON Metcalf 5600

Complete Office Equipment

Blank Books Card Systems

Business Forms and Books
Ruled and Printed to Your Order

THE CHAS. CHAPMAN CO.

91 Dundas St. Metcalf 370

WM. C. BENSON & CO.

Chartered Accountants

267 Dundas St. 204-5 Douglas Bldg.
LONDON, ONT. WINDSOR, ONT.
Phone Met. 1537 Phone 3-0820

GUNN & SMITH

Solicitors

John M. Gunn, B.A. Fletcher Smith, B.A.

BANK OF TORONTO CHAMBERS

Metcalf 380

ELMO W. CURTIS

INSURANCE

371 Richmond Street

Metcalf 1134-W London

THE QUARTERLY REVIEW OF COMMERCE

PROFESSIONAL DIRECTORY

THE BASIS OF INSURANCE IS SECURITY

The Strongest Company Gives the
Best Protection.

Before Renewing or Placing Insurance
See the Agent for

The Home Insurance Company
Dundas Building London, Ontario

THE LITTLE STUDIO
of
WALTER DIXON
Graduate Portraits

For DEAFNESS

Don't endanger your business and social
life. Consult your Doctor . . . then

Get the Genuine
ACOUSTICON
. . . and HEAR!

■ Lighter	■ Fully Guaranteed
■ Smaller	■ Trade-In Allowance
■ More Efficient	■ Budget Payments

ACOUSTICON INSTITUTE
214 Royal Bank Bldg. Richmond St.
Metcalf 499-R
LONDON - ONTARIO

E. A. Siegrist & Co. Limited
INVESTMENT DEALERS

* * *

Canadian, Government, Municipal
and Corporation Bonds

* * *

New Bank of Toronto Bldg.
LONDON - ONTARIO

Campbell, Lawless, Parker
& Black

* * *

Chartered Accountants

* * *

TORONTO LONDON
6 Adelaide St. Huron & Erie Building

Compliments of
Carling Insurance Agency

* * *

General Insurance Brokers

* * *

1 Market Place Metcalf 2322

For Advertising Rates

Apply to Advertising Department
QUARTERLY REVIEW OF COMMERCE
University of Western Ontario, London

C15

0 E 2 E □
1 3 2 8
2 E 3 2
3 4 5 6 7
4 5 6 7 8
5 6 7 8 9
6 7 8 9 0 1 2 3

0 E 2 E □
1 3 2 8
2 E 3 2
3 4 5 6 7
4 5 6 7 8
5 6 7 8 9
6 7 8 9 0 1 2 3